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THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. II.—5TH YEAR. SYDNEY: SATURDAY, OCTOBER 19, 1918. No. 16.

FROM SOLDIER TO CIVILIAN.[1]

By **F. J. Chapple, M.B., B.S.,**

Grading Medical Officer, No. 7 Australian General Hospital.

The problem under consideration is how best to facilitate the return of the soldier to his former occupation, or to some other useful one, if a change is desirable or necessary.

The ideal of a democracy is that, during the state of war, the whole nation, when called upon by its chosen leaders, will strive to "the last man and the last shilling" to retain its inherited freedom, with the corollary that the return to the civilian life at the close of the war shall be made as soon as is compatible with the nation still remaining prepared to arrest or punish any offence against the country's laws, whether by an individual or even by a group of nations, however wealthy, numerous or powerful.

Now the passing from the civilian to the soldier has been gradually organized during the last few years; and surely the time is ripe for improving the arrangements for the converse.

The discussion of the best methods and guiding principles for achieving this end will be of inestimable value if the thoughts and viewpoints of all sections of the community can be correlated. This article is intended to open the way and to invite the constructive criticism of methods already beginning to be tried in Australia for dealing with this question.

We have to deal with men who have responded to their State's call to defend those otherwise defenceless, and who thus, to greater or less extent, have given up their power of initiative; from whom the greatest spur to endeavour has been removed, *viz.*, the fear of starvation, nakedness and neglect during ill-health. Many of them, after undergoing dreadful stress to "mind, body and estate," have become "institutionalized," obsessed by the conviction that the future is utterly hopeless, being maimed, or, what is still more depressing, because less understood, being labelled as suffering from incurable internal or mental afflictions.

To state the case in a series of queries:—

Can a man half earn his living?

Can many light employments be found for him?

Can a man be paid at full rates and not do full work?

Can a man be paid according to the commercial value of his work?

The principles to be borne in mind in attempting the solution of this problem, stated *seriatim*, are:—

(1) It is surely just as much the business of the Commonwealth Government to make every arrangement to send back to civilian life in the best possible condition soldiers who have become incapacitated, as it is to train men for the different tasks of modern warfare.

Only healthy, strong, first-class men are admitted to the Army, and they should be discharged in a similar condition, or at any rate as nearly such as all the resources of medical and surgical science can secure.

(2) The alloting of a military pension is the very least compensation to be offered. A war pension is not given as a reward for service, but it is intended to be a help in regaining useful citizenship.

This was recognized early in this present war in Great Britain, where legislation was passed which increased the war pensions received by men who had served in the war, if they underwent not only curative, but also vocational training.

In Australia, however, up to the present time, it can be stated without fear of contradiction that the conferring of a war pension is often a positive hindrance to the ultimate well-being of the recipient. It even does actual harm to him in some cases.

(3) No invalid is discharged from the Australian Imperial Force until it is determined that further medical or surgical treatment in a military hospital or sanatorium will neither remove nor reduce his disability. Hence a man should not be discharged with or without a war pension until it is ascertained that he is known to be as fit as he can ever expect to be to resume his former or other suitable habits of life. This will mean, then, primarily, that a man must be helped to recover his "pep," his "interest in life" and to banish the idea, often long nourished in his bosom, that he is "never going to be any good any more." "We are saved by hope," and until the man has acquired a hopeful view of the future, to discharge him will be harmful to himself and to his community.

(4) A test of fitness must be applied corresponding as nearly as possible to the man's prospective conditions in life. Mere clinical tests, however minute, and however skilfully applied, will furnish only partial information to a "Board," and the man himself will need a corroboration that he can understand, of the assurance that "he will get quite right." This test should be gradual and regular, just as it is for a man being trained for an athletic contest. It should be continued and graded until at last the man is himself convinced that once more he will be "some good after all." We shall need to have medical officers set apart for this work, and their opinions and advice will become more valuable with increased experience. For example, what claim to fair or wise dealings can any system have which makes it possible for 21 out of 107 returned soldier employees in one establishment to be sick, "absent without leaves," or in the clinic on one day? A system must be formulated and applied which reduces to a minimum the number of the maimed, the halt, the blind, "the old soldier," the self mutilated, the malingerer, the alcoholic, the venereal, the neurasthenic, the loafer—whom military service has partly or wholly, directly or indirectly, produced—who will not make any effort to become useful members of the community and who will eventually become a menace to its well-being.

[1] Published by permission of the Principal Medical Officer, Fourth Military District.

The programme, to be effective, should provide:—

(1) Curative workshops.

(2) Vocational training.

Curative workshops will afford both a treatment and a test. A treatment of the inert mind and the untrained body, to fit the invalid to do once more what he did before he joined the Army. And a test of adequate fitness to resume the old-time occupations. These will be under the supervision of medical officers, who must steadily acquire special knowledge of the problems to be met and the principles to be applied to overcome them. And suitable non-commissioned officers must be trained, both to awaken the needful interest and to secure gradual development of the man's capabilities.

Vocational training is a further stage. Already this is possible for a few men wanting to follow agricultural pursuits, and it should be quickly extended to include training in new occupations, men who, perforce, or by choice, are desirous of altering their means of obtaining a livelihood.

Curative workshops provide the most efficient method of advance along the journey back to complete fitness. And the first and constant aim of the medical officer in charge must be to secure and maintain the man's cheerful co-operation. The course must gradually approach nearer and nearer to the actual conditions to be met with in ordinary occupations, because the light occupations in civil life which are at present sought so commonly (and oft-times with much advantage), will doubtless become fewer and fewer as openings become filled. And employers will hardly continue to desire to find places for men only half efficient, nor would fellow-workers agree to their employment. Now the grading can very readily be accomplished by modifying the course of heart exercises suggested by Dr. T. Lewis and others, and first recorded in the *British Medical Journal* of September 23, 1916. This not only is *per se* a most useful aid to development of mind and body, but it also furnishes a valuable means of determining what progress has been made.

Curative workshops, affording both a treatment and a test, can be very useful in aiding the upkeep of any institution of which they form a part. But their chief benefit will disappear rapidly if they are judged by commercial standards, based on the ratio of the amount of money and time spent to the value of and speed in which articles are produced. The profit cannot be thus assessed in pounds, shillings and pence, and any attempt to force these shops to do so will nearly destroy their benefits. The plan, already well under way now at No. 7 Australian General Hospital, Keswick, South Australia, fairly well covers the curative workshops system. There are four distinct buildings ready for use: (1) a carpenter's shop, (2) a smithy and fitting shop, (3) a bootmaking and leather shop, and (4) a basket-making and handicraft centre. These have been provided and equipped by the Defence Department and, of course, principally by the Red Cross Society. The practice followed is as follows, although this is, of course, subject to alteration as circumstances require.

On admission to hospital on his return from abroad each patient has a curative work card sent with him to his ward. On this is recorded useful information concerning him, *e.g.*, the educational standard reached, his previous and prospective occupation, his disability, etc. It also contains a list of employments, most of which are already available, arranged in different grades for medical or surgical cases. As soon as his medical officer thinks he is ready to start exercises, the card is forwarded to the grading medical officer, with the date entered on a section of the grade which it is considered is suited to the invalid's present condition. From then on he is more or less under the care of the grading medical officer till he has reached the highest grade. Then he is boarded out in the usual way. His willingness to work and his degree of skill are recorded on the work card and filed with his papers.

Physical exercises commence each week-day at 9.30 a.m., and last 15 to 30 minutes, according to the invalid's condition. After 15 minutes' interval the invalid parades in one of the following:—

(*i.*) The Garden.—Here he mows, top-dresses or weeds the lawns, waters the flowers with a can or hose, tidies paths, digs beds, etc.

(*ii.*) The Carpenter's Shop.—Here he may saw or plane wood, drive nails, turn screws and make wooden articles useful for the hospital or home.

(*iii.*) The Smithy or Fitting-Shop, with its stocks and dies to make threads on bolts, so useful a movement for stiff joints of arms, its drilling machine, its lathe, worked by treadle or electric motor, its hammers and anvils, its forge, all offering more interesting movements than the earlier ones practised in the massage department, and making the manufacture of many iron or steel articles possible.

(*iv.*) The Boot Shop, where the repairing of boots affords useful light employment at the earliest stage of the course, even for men unable to stand up to their work.

(*v.*) The Basket-making or Handicraft Shop, where interesting, remunerative light occupations are provided, often perhaps previously taught by the ladies who attend to men who could not leave their wards or their beds.

(*vi.*) The Orderly Room, for light fatigues, clerking in the office, tidying up the hospital grounds, acting as motor orderly and the numerous small employments so necessary in a hospital.

(*vii.*) The Motor Garage, where he can work on the motors, paint or varnish the bodies, or repair or clean the engine.

At 11.45 a.m. the men who have been able to stay out the whole time are dismissed for dinner and rest. At 2 p.m. a further course is begun, either for another set of invalids, or at times for the same set, when getting near to the time of their discharge. At 4 p.m. the men are dismissed for the day.

Amusements and recreations are available on the croquet lawn, bowling green, lawn tennis court and cricket grounds. Indoors billiard-tables, concerts and cinematograph shows are provided. These are cheering aids to recovery, but the chief aim of the department is ultimately to discharge each as a useful citizen ready for his job.

Precautions.

1. Work at the shops is undertaken only in receipt of a work docket from a responsible officer, and com-

pleted after approval by the medical officer in charge. This carries a record of material used, and is entered up in an expense ledger, checked each month.

2. No patient commences any part of this course until his medical officer is satisfied that it will be beneficial to him.

3. A patient is under the constant supervision of a medical officer. Both the non-commissioned officers in charge of the shop and the physical training instructors are constantly reminded that they are dealing with hospital patients.

4. Any patient showing signs of discomfort eases off, or is sent back to his ward for examination and report by his special medical officer.

5. Physical exercises under Defence Department instructors form the initial part of each daily grade, and before and after these the man's pulse-rate is taken and recorded. These exercises were used here with great benefit during 1917, with more or less regularity, and in May, 1918, this scheme was more definitely launched. Fortunately we early had a physical training instructor who realized that "drill" was not wanted, and one who so adapted his methods that attendance at the exercises became quite a popular event in the day's routine. The exercises have been modified to suit conditions and lessen time of waiting by different groups.

6. The continuity of the course must be preserved, and it is important that there should not be any interruption in it if it can be avoided. Certainly the regular military "leaves" do militate against the success of the scheme; but the fear of having leave stopped is a great incentive to regular attendances at all parades. At present we do not feel confident enough to suggest that leave should be cut out, especially since all prophylactic designs to curtail the consumption of alcohol have proved so effective that further limitations are sure to be imposed.

7. The non-commissioned officer in charge makes notes of each man's readiness to work, his skill and physical response, etc. These reports are used in making up the final records after a man's discharge, and should prove most valuable guides to bodies concerned in repatriation, vocational training, etc., as to whether special assistance would be of probable value to the man and along what lines.

The following points already noticed are recorded as likely to help others guiding this work:—

(*i.*) Hospital fatigues are not popular; but the nursing sisters can generally be relied upon to apportion a good deal under this heading.

(*ii.*) The outside work in the gardens is not nearly as popular as the work in the shops, probably because there is so little to show for it immediately. Still, it can be used without much insistence, and it is a most valuable means of testing the outside worker's capability, and, if developed on scientific lines, might become even attractive.

(*iii.*) No patient is boarded out until at the very least he has reached the severest grade, and the aim should eventually be to keep the man in this grade until he can step out from the hospital into a job, when he is quite ready to go on with it.

(*iv.*) No work should be carried on anywhere else than in the shops, except with the approval of the medical officer in charge, as the presence of skilled non-commissioned officers will be found so useful that the primary reason for their presence, *viz.*, the oversight of invalids, will soon be lost sight of in the desire to make use of their special knowledge.

(*v.*) Tools must not be taken out of the shops under any pretext for general hospital work.

(*vi.*) Many of the articles made will be offered for sale at the Red Cross shop, and in the afternoon the invalid will be able to work for himself and keep the products of his work after paying for the material used.

(*vii.*) Work in the afternoon is less popular than that in the morning, but the number of men who come and ask to fill gaps is very encouraging. Doubtless the arrangement which allows articles made after dinner to become the man's own property will lessen the unpopularity of these hours. An alteration of time has been found wise, so that a morning group of one day becomes an afternoon group on the day following, and *vice versa*.

(*viii.*) The massage and electrical treatment provided should be supplemented as soon as possible, and eventually supplanted by active movements, which can be carried out in interesting ways in these various occupations. A further aid to this advance from massage to actual work would be the provision of a fully equipped gymnasium.

In conclusion, it must be emphasized that every aim should be directed to secure the man's willingness to follow this course. His ready acceptance of this form of treatment will best and most promptly ensure for him the advantages to be derived from it.

THE MENTALLY DEFICIENT.

By **P. A. R. Lalor, M.B., B.S. (Melb.),**
Acting Medical Superintendent, Mental Diseases Hospital, New Norfolk, Tasmania.

(Continued from page 301.)

A Royal Commission (1908), which for three years in England pursued investigations into this subject, issued a report, and the gist of its recommendations were compulsory detention of those who, for any reason whatever, were unable to be classed in the same mental category as their fellows. The opinon of this Commission is really the last word on the subject, and it is idle for anybody to dispute this method without tacitly admitting that they do not wish to deal effectually with the question at all. It is no use inviting or admitting such patients voluntarily into any institution in the same way that we treat patients in a public hospital. The only reason for detaining them at all is for the good of the State, and to prevent them from becoming wasters or criminals and from being the cause or origin of more wasters or criminals. The idea, therefore, of the Commission could be adapted in Tasmania as follows:—

(*a*) It would be necessary first of all in Tasmania to arrange for the compulsory detention of the feeble-minded by altering the present Act to allow of feeble-minded persons not certifiable under other provisions of such an Act being certified under new provisions specially drafted for such a purpose.

(*b*) In this connexion it must be remembered that,

as I have already stated, fully 5% of the children attending our State or secondary schools are feeble-minded. We have at present a system of medical inspection for ordinary common ailments usual amongst school children, and we should institute an efficient system of mental medical examination of all children within school age, who are attending either State or secondary schools, and, if necessary, such children should be certified or brought under the provisions of the Act in such way as may be deemed necessary.

(*c*) It would also be essential to introduce a provision into the legislative enactments dealing with this subject preventing the marriage or possibility of parenthood of any person known to be feeble-minded; the penalties for the breach of such provision should be rigidly enforced.

The British Royal Commission recommends the establishment of what they term a "farm colony," but the more proper name would be an "industrial colony," since other industries besides farming would be followed. In such a colony, not only farming pursuits of all kinds would be adapted for the varying mental requirements of the inmates, but they would also be trained in such other occupations as carpentering, bricklaying, bootmaking, tailoring and plumbing work. Persons deemed suitable might even be trained in electrical or other engineering work. The mental development provided by such training would be, of course, more important than the actual work done.

For such a scheme a site of at least 200 acres is required, and with such an area efficient and ample training in agriculture could be given. According to the recommendations of the Royal Commission, efficient education and training could be given to at least 1,000 patients. Here at New Norfolk, if the Government acquires the ground which has been recommended to them, we will be able to conduct such a scheme, and each mentally deficient inmate could thus be trained in a variety of occupations and the one best suited to his mental calibre could be selected.

As head of the establishment would be appointed a Director, preferably a medical man, and the Superintendent of the Mental Hospital at New Norfolk, because a trained mental specialist is necessary for the classification, control, education and treatment of these individuals. The first step would be to examine from a mental standpoint all persons admitted to such an institute, and to classify them according to their degrees of mental deficiency. Those who needed special education before commencing any artisan occupation would be dafted into special wards, where they could be sufficiently trained for the occupation ultimately intended for them. The leading authorities in Great Britain admit that for any effectual carrying out of such a scheme that the Director should be a medical man and a specialist in mental diseases. He would be able to grade the degree of mental deficiency and would consequently be able to apportion the type of work suitable for each patient coming under his purview. In addition to the Director, who would be the Medical Superintendent of the Mental Hospital, there should be a senior assistant medical officer, who would, of course, be the assistant medical officer of the Mental Diseases Hospital at New Norfolk. It may be, perhaps, necessary here and now to state definitely that all the authorities in the Commonwealth agree that such an institution as is proposed should not be divorced from the supervision and control of the only mental expert which this State at present possesses. Consequently, any reference to provisions necessary to be made in connexion with such an institute are distinctly made in reference to the control officers of the Mental Diseases Hospital at New Norfolk.

In addition to the medical staff, it would be necessary to obtain the services of a secretary, who, for the time being, could be the Secretary of the Mental Diseases Hospital at New Norfolk, with an increased salary. The various artisans who are at present employed at the Mental Hospital should be engaged specially and separately, as trainers of such patients as might be found suitable for learning the various occupations in which such artisans are engaged. In addition, a specially trained teacher, who might possibly have to be imported, would have to be appointed to train and educate from a mental point of view certain definitely classified inmates. It must not, of course, be thought that such an ambitious scheme is intended to be adopted immediately in so small a State as Tasmania, but it is obvious that any scheme that may be adopted should have the ultimate end in view. The Mental Diseases Hospital at New Norfolk is alive with instances of the absence of foresight in the past, and we do not wish to repeat such mistakes.

I understand that the Government intends in the near future to establish accommodation for feeble-minded persons at La Maison, which is an adjunct of the Mental Hospital at New Norfolk. This being so, it is only reasonable to suppose that they are desirous of having an efficient scheme on which to commence the operations that they intend to introduce. No doubt they expect that a scheme will be put forward which will enable them to extend and carry into force for a number of years. In addition to La Maison and the proposed alterations thereof (which alterations will only allow of about 50 patients at the most being dealt with), it will be necessary to provide at least three or four cottages, built of such cheap material as wood and fibro-cement to allow for the proper classification of the feeble-minded being built.

The total cost of such a scheme as is here proposed would mean little or no additional expenditure in the way of new appointments. It certainly would mean the provision of new buildings, but any Government which would have the courage to deal scientifically with the problem before us to-day would have the approbation of the whole community, and it is certain that no money so expended could possibly be wasted. The present staff which I have the honour to supervise at New Norfolk, is a most excellent one, and the best that I have yet to deal with in my experience as a public servant, and I am sure that, from sheer love of their work and for no other reason, they will see that my efforts to make such a scheme a success will be unsparing. What I hope, therefore, is that the Government will come forward with some definite policy this session. It is true that there are other burning questions before the Government, and that they are frequently harassed by the introduction of new proposals. Can anybody say truthfully and conscientiously that any interests than that of the State will be served by such a measure, and that such measures as

are here proposed are not the most vital they will have to deal with?

The Obtaining of Control.

Adequate control and supervision are the urgent needs of the feeble-minded, and, as Sherlock says: "In order that these may be supplied, there must be some interference with the liberty of the subject." As regards those who are the children or relatives of rich people, there is no difficulty, although such people also have their responsibilities to the State. But when society at large takes action in connexion with those who are not able to afford the many expenses involved by private control of patients, there is undoubtedly a strong antagonism between efficient State control and the primitive instincts of family life. It would be all very well if the treatment provided were such as could be provided in cases of ordinary sickness in a public hospital, but in order that such treatment may be effective and continuous, there must be some form of compulsory detention, otherwise, every now and again, some affectionate relative would prevail on the Chief Secretary for the time being to release his or her very mentally deficient offspring, and so the safety of the public and the purity of the race, which would be safeguarded by such an institute, would be set at nought.

It is, therefore, intended in a new act, which I confidently hope will be introduced this session, that compulsory detention will be provided for, and insisted on in all cases save when the consent in writing of the Chief Secretary is obtained, in addition to a bond of £50 that those who take the responsibility for looking after the person to be released will, if the conditions required are not observed, be liable to forfeit the fifty pounds. As an instance of the damage that is done, as far as the State is concerned, by the indiscriminate release of the mentally deficient, there is a case under the present Act which provides in itself a more efficient argument than reams of foolscap could. We have had recently in New Norfolk a patient, who, on the urgent request of a relative, prevailed on the Chief Secretary for the time being for her discharge to be granted. Scarcely a fortnight after she was discharged she became pregnant, and was delivered in due course of a mentally-deficient offspring, who is, and will be, a burden on the State for many years to come. This would be the monthly, and even weekly, experience if a law such as is proposed under the present scheme were not made adequately rigid, and, in fact, it would be quite useless to adopt any scheme for dealing with the feeble-minded, if they could be released without grave reasons and without a heavy bond.

The method by which this control could be obtained would be by the certification under the provisions of the proposed new act by two justices and two medical practitioners, or by a request, accompanied by two medical certificates, asserting that the patient proposed to be committed was feeble-minded (not insane), and a fit and proper person to be detained under the sections of the act dealing with the feeble-minded. It would be implied and understood by those committing such a patient, whether under a justices' order or by private request, that he could not possibly be released except by the Chief Secretary, who would only give permission for grave reasons, and in all cases under a bond of fifty pounds. The effective examination and disposition of school children provided for in any new act must be energetically carried out.

The Prevention of the Propagation of the Feeble-Minded.

No less important is the prevention of such patients, whether those released under a bond, as provided in the last paragraph, or of those who might be the children of or related to wealthy persons, from propagating the unfit. Under the new act there would be provision for heavy penalties for all persons having the control of patients who had been in the institute, or for parents or guardians of feeble-minded persons who had not been in the institute, for allowing such persons to marry, or for allowing them such liberty as would result in their becoming the parents of illegitimate children. This penalty would also extend to any clergyman, registrar or other person empowered to marry who performs such ceremony knowingly, or without due enquiry.

Provision could be made, and it might be as well, perhaps, if it were made, for sterilization or asexualization of any such accidental offispring as might occur, to be performed as soon as such child became of suitable age for such operation to be done. It is absolutely essential that this child should be committed to the institute at a very early age. The sterilization could be performed in any case where sexual tendencies appeared to be exaggerated, but such a procedure could not be adopted as a general measure.

It is impossible within the scope of a short paper for me to give in detail all the reasons that could be urged in favour of the course recommended for the proposed new act being adopted. Let anybody who can suggest a better scheme than that which, after years of consideration, a Royal Commission in England, after having examined thousands of cases, and after having taken hundreds of pages of evidence, recommended, and just because no country has yet had the courage to deal with this subject as it ought to be dealt with, is it any reason why an Australian community, which is well known for its progressiveness, should hesitate. Half-measures are worse than none at all, and it is to the great credit of the present Premier that he has earnestly desired to deal with this subject efficiently. He has a very difficult task in front of him, on account of the pusillanimity of politicians. They will all urge the absence of any precedent for such action to be taken, and, as I have previously stated, there is no such precedent, and if there were, half the credit of initiation would depart from this State. You who have taken the trouble and have been patient enough to have listened to such a lecture as I have given have given proof of your earnestness and whole-heartedness in the cause of the miserable members of the community which we have to deal with under such provisions, and, what is more important, have shown that you realize that the very fount and origin of the State's being is at present polluted. I, therefore, rely on you to take the action which the women of other generations have not hesitated to take when the well-being and existence of the State has been threatened.

Let me hope that the results of my imperfect efforts to-day will result in your insisting by means of the civic rights which women in this free country possess,

that this problem will form a prominent part of this session's business. There will be all kinds of excuses and reasons given why such a course should not be taken, for the politician unfortunately is prone, particularly on the eve of an election, to put off and defer the consideration of any subject which will not actively advance his re-election. All the papers qualified to lead public opinion in Australia and the medical organ of the Australian medical profession has recommended the course which I have here put before you to-day, but which no State has yet had the courage to recommend.

The proposals which I am here putting before you provide for the effective and compulsory detention of the feeble-minded, and when their detention has been accomplished their proper classification, control, education and training, and also for the prevention of their being released or from their being married and being able to beget children. In addition, such cases as are suitable could be operated on in such an institute, with a view to sterilization, and such other cases of accidental procreation could be admitted at an early age and further damage thus prevented.

Remember that whatever action is taken in the direction proposed in this lecture it will not be forgotten, when the credit is being attributed, there were a few earnest, thoughtful woman, who were the first to initiate, work for, and finally cause to be brought into effect, provisions that will benefit not only this little State of Tasmania, but, by example, the whole great Commonwealth of Australia, and perhaps even the mother country. If you succeed by your efforts in passing a piece of legislation such as is here proposed, and if such a piece of legislation proves to be successful, it would be difficult for any of you to imagine the amount of good you will have effected or the amount of suffering which you will have obviated. I am not exaggerating in the least when I say that racial mental deficiency is gradually but surely ruining the Australian race, and also the rest of the English-speaking race, and I still further venture to add that this is mainly because there is no efficient method at present of dealing with the problem of the unfit. What we do at present is merely to incarcerate in our asylums the idiot and imbecile, who, by their very nature, are inefficient to cause any real harm, and to allow at large the whole dangerous class of the mentally deficient, known as the feeble-minded, with all their power for mischief until such time, forsooth, as they are arrested for some crime against the law. In this time they can have produced many more deficient than themselves to continue and perpetuate the decadence of the race.

I now conclude, knowing that I can leave this cause in the hands of the women, who have, throughout the long history of our race, been in many cases the guardians of our welfare, and that such women as those who have succeeded in listening to me this afternoon have given in earnest of their inflexible determination not to discontinue their efforts until this national problem has been properly, efficiently and courageously dealt with.

Individuals Mentioned in the Geneological Tree on page 302.

1. Died of acident; violent temper.
2. Died suddenly; violent temper.
3. Morally depraved.
4. Violent.
5. Died in infancy.
6. Died, *aet.* 44, of apoplexy; violent, alcoholic, had spoken of suicide.
7. Died in infancy.
8. Died of heart disease, *aet.* 44; violent, erratic, frequently would not work for no reason.
9. Aged 65 years; healthy.
10. Died suddenly; violent.
11. Has not been heard of for years.
12. Had sudden paralysis at 17 years.
13. Peculiar; will not speak to his mother.
14. Patient Charlie; hydrocephalus in infancy; now 35 years old.
15. Died of embolism.
16. Three miscarriages, the first two at seven months. The mother died during the third miscarriage at eight months.
17. Twins.
18. Among others without reason; lack of natural feelings, erratic and "nervy."
19. Patient Con., aged 33 years.
20. Well.
21. Died in infancy of marasmus, *aet.* eight weeks.
22. Died in infancy.
23. Peculiar; "light," not serious.
24. Hysterical and "nervy."

Reports of Cases.

A CASE OF GANGRENE OF THE LEG, PROBABLY DUE TO ANGIOSPASM.

By **Eric Jeffrey, M.A., M.B., Ch.M.,**
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On the evening of July 14, 1918, Mrs. V.B. was seized with acute pain in the left foot. Her people tried all night with foments and massage to relieve the pain, but without any success. I was sent for next morning, and saw her for the first time. She was evidently in great pain, which was localized to the left foot, from the ankle downwards. She gave me the following history. She was thirty years of age, and had been married for ten years without ever becoming pregnant. She had had a mild attack of chorea when twelve years of age. For several years she had been unable to lead a strenuous life, and, in her own words, had "loafed round." She was able to do her housework and live in comfort so long as she did not unduly exert herself. Three years ago she had been treated in the Wahroonga Sanitarium for six weeks for heart trouble. She had been subject to throat troubles all her life. There was no history of, and no reason to suspect, luetic disease. She was practically a teetotaller. Her mother and all her brothers and sisters are alive and well. Her father died at 67 of heart disease and alcoholism.

She was visiting her mother at Chatswood when this illness came upon her. The weather was bitterly cold. A fortnight before this attack she had had a spasm of pain in her left foot, while on her way to a dance near her home at Richmond. The foot was cold, and the cramp extended to the ankle. This passed off in a few minutes, and she was able to go on to the entertainment. The next day, while at mid-day dinner, her right foot suddenly became cold, painful and of the colour of chalk. The foot was bad all the afternoon, and it did not improve until towards evening, although she walked round on it and took other means to restore the circulation. She had no more attacks until the one which came under my notice a fortnight later. Both these attacks occurred during very cold weather.

On examination on July 15, 1918, the patient appeared a well-built and rather emotional woman. The heart was very dilated and its rhythm extremely irregular, conforming to that type of arrhythmia called auricular fibrillation. The arteries were not thickened, and the systolic blood pressure was 110 mm. Hg.. The pulse-rate was 120, the temperature 36.9° C.. Her urine was pale yellow and contained neither albumin nor sugar. No test was made for hæmoglobin, but the colour of the urine did not suggest its presence. The left foot was chalky white and very painful, from the malleoli downwards. It felt cold, and the sensations over it were very disturbed. There was no evidence of obvious disease in other systems. Her vision was good and mental condition clear.

A diagnosis of angiospasm of the nature of Raynaud's disease was made, and the patient was given morphine for the pain, was put on nitroglycerine and calcium lactate and was advised to wear warmer underclothing and to avoid cold. Thyroid extract was not given, because of the cardiac condition. Next day she was perfectly well and went out walking.

In the early morning of the day after this, that is, on July 17, the symptoms recurred with great severity in the other foot, the right this time. The patient told me that it had started, as usual, by suddenly becoming pearly white. I saw it about 10 a.m., and by then the whole of the foot had become of a dusky purplish hue. Her pain was so severe that I had to inject 0.05 gm. of morphine within three hours to give her relief. I recognized that gangrene was threatening, and in desperation had her removed to a massage establishment in Sydney, to see if galvanism, as recommended by Barlow,[1] would save the foot. Passive hyperæmia, with an elastic bandage round the thigh, according to Cushing's method,[2] was also tried. On the evening of July 19, three days after the onset of the trouble in the right foot, she complained of severe pain in the calf of the affected leg, which was tense and very tender. Next day Dr. Sinclair Gillies kindly saw her with me, and advised that nothing now would prevent the gangrene. The patient was accordingly that day removed by ambulance to St. Lawrence Private Hospital at Chatswood.

During the next eighteen days the gangrene gradually established itself. The toes and the outer edge of the foot to the heel underwent mummification. The foot stayed purplish as far as the ankle. Above the ankle a couple of large blebs formed, and the tissues beneath them became dry and gangrenous. It seemed as if a line of demarcation was going to form about the middle of the leg, a distinct margin becoming evident, with the skin above it apparently healthy and that below much duskier in colour. The skin above this margin was inclined to show a fine desquamation, and there was much wasting of the whole lower limb. No pulsation could be felt in the popliteal or tibial arteries. The leg remained perfectly sweet and dry, and the temperature did not give any evidence of toxic absorption. Her mental condition was very bad; she was extremely depressed and frequently delirious. Her pulse-rate rose to 150. She suffered great pain, necessitating the frequent use of morphine. It was very difficult to keep her in bed. In view of these considerations it seemed probable that the patient would die if we waited for a definite line of demarcation to form. Dr. Cyril Corlette saw her in consultation with me on August 6, and, as he held the same view, he undertook the amputation on the same day. Under rectal ether and spinal injection of novocain it was attempted to remove the leg in the middle third below the knee, that is, just above the abovementioned margin. However, it was found that the deeper tissues here were quite dead, and had the appearance of boiled meat. Incisions were made higher and higher up the leg in an attempt to find the lowest limit of healthy tissue. This, however, was not reached until we came to the junction of the upper and middle thirds of the thigh. Amputation was accordingly done here; even at this level it was only necessary to tie three small vessels, and there was very little oozing. A tube was put in each corner of the wound and a dressing applied. These tubes were removed in twenty-four hours, as there was practically no drainage through them. Healing was uneventful and by first intention, except at the two corners, where the tubes caused sloughing of the tissues they rested on. However, these sloughs did not delay matters much, and in a month the stump was firmly healed.

Convalescence was complicated by the mental disturbances before mentioned. On August 14 a troublesome diplopia set in, with slight paresis of the right external rectus. During the day she was usually mentally clear, but at night time and in the early mornings, and also on colder days than usual, she was badly affected. She became noisy and very restless, and frequently got out of bed. It was not safe to leave her for a minute. Her sense of orientation was gone, in the same manner as in Korsakoff's psychosis. She was very depressed and lachrymose at times. She frequently had mild aphasia. When questioned during her rational hours she denied all knowledge of her outbreaks. She said that she recollected having had terrifying visions and that everything seemed unreal to her. On one occasion she told me she had seen a ship of the time of Henry VIII., and got out of bed to meet it. At times her vision was very poor, apart from her diplopia. On August 18 Dr. Andrew Davidson saw her with me. Her heart had much improved with rest and digitalis, and he attributed her mental trouble to spasm of the cerebral arteries, causing temporary anæmia of various parts of the brain, and suggested the exhibition of nitrites at night time. After this was done, the trouble cleared up at once, and did not return on any occasion up to her leaving the hospital. One must also admit that, coincidentally wtih the giving of the nitrites, the weather became warmer, and this may have aided the cure. From now onward until her discharge from hospital on September 3, her convalescence was uneventful, except for a mild attack of bronchitis.

In the differential diagnosis the following conditions must be considered:—

(1) *Erythromelalgia.*—This may be definitely excluded. In this condition there is painful flushing of the affected part, generally the foot. The pain is aggravated by hanging the limb down and relieved by raising it. There is local fever, and the foot is bright red, with bounding arteries and intense cutaneous hyperasthesia. This is often due to organic disease of spinal vasomotor centres in the intermedio-lateral group of cells. Batty Shaw[3] states that in nine cases anatomically studied there was a chronic endarteritis.

(2) *Intermittent Claudication.*—This may be also excluded. It occurs more often in men past middle age and the subject of arterio-sclerosis. The cramp never occurs while the patient is at rest, but only during a period of exercise. It is due to angiospasm of already narrowed arteries that are unable to cope with the increased blood supply demanded by the exercising muscles.

(3) *Embolism or Thrombosis of the Femoral Artery.*—This is much more difficult to exclude. The dilated heart might easily be a situation whence a large thrombus might arise, and the sudden onset of the pain is certainly suggestive of embolism. But I think the mental changes that were present, and which are common in angiospastic neuroses, and the history of recurrent attacks in alternate feet extending over a period of a fortnight make it improbable that embolism was the cause in this case. Of course, an embolus may have blocked the artery coincidently with the onset of spasm, but there is no need to call in this explanation.

(4) *Pre-Senile Gangrene.*—This differs in no respects from senile gangrene, except that it occurs in younger people. It is always associated with endarteritis, and is due to thrombosis in an already narrowed vessel. Keen[4] states that endarteritis occurs much more commonly in the young than is generally supposed. It is generally associated with premonitory symptoms, *e.g.*, tinglings and sensations of numbness of the feet for a considerable time before the onset of the gangrene. In this case there were no such premonitary symptoms and no evidence of arterial disease.

(5) *Raynaud's Disease.*—There is no doubt that this is the correct diagnosis. The sex, age and temperament of the patient, the symmetrical nature of the attacks, the incidence during extremely cold weather, and the gradually increasing severity of the spasms, all point to this diagnosis. Nitch[5] states that these attacks may start during or after a meal, when getting up in the morning, or when the patient is tired. It is remarkable that in this particular case three of the attacks came on under just these circumstances. The ordinary, milder forms of Raynaud's disease are too well known to be described here. The interest in this case lies in the very extensive amount of tissue lost. In severe cases Osler states: "Both feet may be swollen to the ankle, with the toes black, but, as a rule, the process subsides, and in a case, even of great severity, only the tips of the toes are lost . . . but there are terrible instances where patients have lost both hands and feet." Such a case is described by Choyce[6] in a young West Indian native, in which both feet were affected with gangrene to above the ankles and both hands to the bases of the fingers. He ascribed this case to Raynaud's disease, as syphilis, endarteritis and ergotism could be excluded. Another case is reported by Osler, in which the gangrene extended to the elbow. This patient also had the mental symptoms commonly associated with the disease. He had three attacks of aphasia, with hemiplegia, from which complete recovery took place. He died during a severe attack with coma. These cerebral symptoms are ascribed to spasm of the cerebral arteries, and in cases of temporary blindness occurring during the disease spasm of the retinal vessels has been seen with the ophthalmoscope.

As regards the pathology of the condition, most authors seem to consider it due to angio-neurosis, and caused by disorders of the sympathetic fibres regulating the blood vessels. Osler will not recognize as Raynaud's disease any

cases in which organic vascular disease is present. Purves Stewart[1] states that, on no other hypothesis than that of angiospasm can these cases be explained. Spinal and neurotic changes have been reported, but in the majority of cases are absent. In the cases with extensive loss of tissue it is possible that thrombosis occurs below the spasm during the onset of the gangrene. Later the spasm relaxes and the thrombosis spreads upwards through the now patent vessel, and also affects the collateral circulation. This would account for the exacerbation of the symptoms on the third day in this case. Leo Buerger,[8] who investigated cases of gangrene in Russian Jews in New York, is persuaded by microscopic evidence that Raynaud's disease erythromelalgia, angiospastic gangrene and acrocyanosis are all the same condition, and are caused not by obliterating endarteritis or thrombosis following a primary arterio-sclerosis, but by local thrombi of both arteries and veins, which undergo gradual organization. However, his cases, though similar in symptoms to Raynaud's disease, were probably not of the same nature.

The cause of the condition is obscure. To say with Osler that it is due to vasomotor instability does not help us much. Purves Stewart[9] is probably nearer the mark when he says that "profound molecular changes exist in the sympathetic system, but these changes have not been recognized." Osborne[10] ascribes it to disturbances of the internal secretions, especially the thyroid, suprarenal and ovarian. He recommends thyroid extract. This has been used in a recent case by Walton Smith, without apparently any great influence on the course of the disease. It is possible that the disease is due to toxins, as similar symptoms can be produced by the exhibition of ergot. In this case the same toxins that caused the chorea, the sore throats and the heart lesion may have been at work in producing the angiospasm. In closing, I would like to briefly refer to the anæsthetic given in this case. The patient was a bad operative risk and mentally disturbed. Under the pretence of giving her an enema, four ounces of olive oil, with three ounces of ether and fifteen grains of chloretone were introduced *per rectum*. An hypodermic injection of morphine, 0.017 gm., with hyoscine, 0.006 gm., was given at the same time. In twenty minutes she was completely unconscious, and was removed to the theatre, where 3 c.cm. of 5% novocain were given intraspinally. The bowel was washed out with saline solution after the operation. There was absolutely no shock, and the pulse-rate did not alter five beats during the whole operation. Breathing was regular and even, colour good, corneal reflex retained, and her condition caused no anxiety during the whole operation. There was no after-sickness, no bowel irritation and no paresis of the legs. Next morning the patient said she had had a beautiful sleep and felt much better, and her pain was much less. She did not know until later in the day that an operation had been performed. I think that this anoci-association method and the sparing her the shock of a conscious induction had a lot to do with her good condition next day.

References.

[1] Osler—*Prin. and Pract. of Med.*, Eighth Edition, page 1122.
[2] Osler—*Ibidem.*
[3] Osler—*Ibidem.*
[4] Keen—*Sys. of Surgery*, Vol. VI.
[5] Nitch, Choyce—*System of Surgery*, Vol. I., p. 224.
[6] Choyce—*Proc. Roy. Soc. of Med., Clin. Sect.*, February, 1911.
[7] Purves Stewart—*Diag. of Nerv. Dis.*, p. 349.
[8] Buerger—Apnd. Keen., VI., p. 54.
[9] Purves Stewart—*Ibidem*, p. 53 (note).
[10] Osborne—*Med. Ann.*, 1916, S. V. Ray. Dis.

RELIEF OF SYMPTOMS AFTER LUMBAR PUNCTURE IN A BOY; A CASE FOR DIAGNOSIS.[1]

By **O. Robertson, M.B. (Syd.).**

A.B., a boy, aged 11 years, was admitted to the Royal Alexandra Hospital for Children on August 23, 1918, under Dr. W. F. Litchfield, suffering from headache and drowsiness. His mother gave the history that, three months before admission, he fell off a fence, nine feet high, on to the back of his head and was stunned. Ever since this accident he had not been quite well, suffering from headache every day. Twenty-four hours before admission his headache became worse. He had pains in the back of the neck and became feverish.

On admission the patient was very drowsy. The temperature was 37.7° C., the rate of the pulse 120 and the respirations 36 per minute. There was no retraction of the head or rigidity of the neck. Kernig's sign was present on the right side. In view of a tubercular family history, a lumbar puncture was performed and 80 c.cm. of clear fluid were withdrawn under considerable pressure. The pathological report on this fluid was as follows: There was no increase in the number of white blood cells, no tubercle bacilli could be found and there was no growth on cultivation.

Next morning the patient was greatly improved, the temperature being 36.7° C.. The headache had disappeared and the patient has remained quite well and free from headaches ever since. The nature of the condition of the patient did not appear clear. The patient certainly did not have meningitis, but the withdrawal of 80 c.cm. of cerebro-spinal fluid indicated some pathological state. Such an excessive quantity of fluid was not obtained in healthy patients. There may have been some injury connected with the boy's fall or there may have been some mild form of encephalitis coincident with the feverishness twenty-four hours before admission. In connexion with this he had seen several somewhat similar cases during the first week of September during a visit to Wagga Wagga, New South Wales. He saw four patients in the Wagga Hospital, which looked to him to be suffering from tubercular meningitis, but which he was told were afflicted with "X" disease. They had had a good many such patients at Wagga lately, who recovered after lumbar puncture. Clear cerebro-spinal fluid, under pressure, had been obtained by lumbar puncture.

[1] Read at a Meeting of the New South Wales Branch of the British Medical Association on September 13, 1918.

Reviews.

THE ANALYSIS OF FOODS.

A useful work[1] on the analysis of foods by C. G. Moor and W. Partridge, Public Analysts for the County of Dorset, presents in compact form much information concerning the processes which are employed in the examination of different foods and food adjuncts. The manual, which contains 258 pages, forms one of the "Students' Aids Series," and has reached a fourth edition. It can be recommended as containing accurate and up-to-date accounts of the methods employed daily at the present time in laboratories engaged in determining the qualities of the people's food. A number of processes are described for the first time in this edition, such as those for the facing of grains, for starch in sausages, for catalase in milk, and for detecting and estimating sulphites, benzoates, peroxides and other preservatives. As the work is intended to supply information as to the choice of a method for any particular examination, a number of processes, described in the previous edition, have been omitted and replaced by methods which have come into frequent use. New sections deal with cider, with the freezing of milk, with the enzymes of milk, with flour "improvers," with self-raising flour, with the bleaching of flour, with hardened oils, with dirt in milk, and with unsound milk in jam.

The title of this book states that it deals with the analysis of foods and drugs. Thirty-five pages are devoted to some notes concerning preparations of the British Pharmacopœia. While these pages contain much useful information about various galenicals, they hardly form a guide to the mode of analysis of drugs. It seems a pity to introduce this section into a book which is so admirable in other respects.

[1] Aids to the Analysis of Food and Drugs, by C. G. Moor, F.I.C., and William Partridge, F.I.C.; Fourth Edition; 1918. London: Baillière, Tindall & Cox; Foolscap 8vo., pp. 268. Price, 4s. 6d. net.

At the representative meeting of the British Medical Association, held in London at the Connaught Rooms in the last week of July, it was resolved by a large majority that a fund be raised to assist the candidature of members of the medical profession approved by the Association as candidates for parliamentary seats.

The Medical Journal of Australia.

SATURDAY, OCTOBER 19, 1918.

Repatriation and Re-Education.

With the establishment of an orthopædic department in Australia a material advance has been made toward the honouring of the debt of the community to those who have suffered maiming injury in the service of the Empire. Unfortunately, this step is limited in its utility, because it starts at a point which is not a natural beginning, and it terminates at a point without any linking up with another essential organization. Major-General Sir Robert Jones has recently defined military orthopædics—an admittedly inapt term—as the surgery of the extremities. Its aims are to minimize the disabling effects of war injuries as far as present-day knowledge and human skill render possible. In order to achieve this it is necessary to apply restorative means at a very early date after the receipt of the injury, to have them applied by surgeons and neurologists with special training in war work, and to continue the application until the disabled man has been taught to utilize the functions remaining in his limbs to the best advantage. The defect in the orthopædic system, as it exists today, is that the treatment is first applied to the men after their return to Australia. While it is desirable, and even essential, that treatment instituted by practitioners trained as orthopædic surgeons, in the military sense of the word, should be begun as soon as the extent of the probable disability can be estimated at the base hospital in France or England, our men obtain their treatment either from general surgeons or at the hands of the English orthopædic specialists, and when they are returned to Australia spend the weeks of transport without special treatment.

Much anxiety is felt regarding the means to be adopted by the Repatriation Department in connexion with the re-education of disabled men. We have repeatedly stated that any scheme that does not embrace an intimate co-ordination between the orthopædic surgeon and the technician must fail to achieve the best results. The delay on the part of the Department of Repatriation to dovetail its activities into those of the Department of Defence is most disconcerting. Repatriation work must begin during the convalescence of the wounded man, long before his discharge from the Army. It is generally admitted among the belligerent nations that re-education cannot be enforced on the disabled men. In Italy every indigent military patient is compelled to enter the school for re-education for fifteen days. Otherwise it depends on the man himself whether he will undergo professional or vocational training. After discharge from the Army compulsion cannot be applied, and should not be advocated. There is, however, a great deal to be gained if every man with a disability were drafted for a short period before discharge to an institution at which the repatriation medical officer and the technician could use their influence to induce him to submit himself to their care. This institution would almost necessarily be a military one, and it would seem as if the curative annexes (usually and unwisely called workshops) were utilized for this purpose. In his admirable address, delivered at the Inter-Allied Conference, on the "After-Care of Disabled Men" by General Sir Robert Jones, the speaker found himself compelled again and again to refer to the part played by the Ministry of Pensions and to the means needed for continuing the restorative work to the pensioner. It is quite imperative in the interests of the Commonwealth and in justice to our disabled boys that the department charged with their care after discharge should recognize the urgent necessity of making arrangements with the military authority to enable the repatriation officers to begin their work as soon as the men land in Australia. Mutual co-operation between the two departments is required to ensure good results. To institute curative annexes to the military hospitals without providing for continuity of training after discharge is a sterile procedure. We have the beginnings of the curative annexes, and look expectantly to the two departments for machinery to render these annexes of permanent value to the men.

SANATORIA FOR CONSUMPTIVES.

It is usually held that the introduction of sanatorium treatment by Bodington and Dettweiler determined a complete change in the prospect of cure of tuberculosis. The history, often told, of the gradual

unravelling of the ætiology and pathology of tuberculosis has made it evident that the optimistic views of the enthusiasts for sanatorium and tuberculin treatment are just as little justified as the pessimistic prognosis largely, if not universally, adopted in the days before the discovery of the tubercle bacillus. In order to arrive at a true estimate of the curative value of the sanatorium, it is necessary to ascertain the frequency of spontaneous cure without its aid. Claims have been made by various competent observers that the open-air institutional treatment of pulmonary tuberculosis is capable of yielding from 30% to 60% of cures in properly selected cases. A close survey of these claims, however, reveals the possible fallacies of such statistics. Among the so-called early cases met with in a carefully conducted sanatorium are those in which the only sign of disease is a slight alteration of the vesicular murmur at one apex, or an occasional ill-defined crepitation. The clinical evidence of tubercular disease in these cases is lacking; the patient is usually suspected of the disease because of a temporary catarrh, with or without cough, or because of some indefinite disturbance of the general health. It is extremely probable that these cases are, in the vast majority, instances of tubercular infection, but it is also probable that the organism, given relatively favourable conditions, is capable of dealing with the infection. The discovery of Naegeli and others of foci of latent or healed lesions in the lungs of nearly every adult after death is highly suggestive of the frequency of spontaneous cure in just those very early cases which tend to raise the permanent recovery-rate in the sanatoria. That striking benefit is attainable by the means employed at sanatoria in the next class of early cases in which the physical signs and symptoms are definite, will only be challenged by those obsessed with the value of other forms of treatment. To assess the true worth of the sanatoria, we should have statistical evidence of the number of patients admitted to well-conducted sanatoria with pulmonary tuberculosis in Stage I. (Turban), excluding all those cases with indefinite physical signs, of the number discharged as cured, of the number remaining well after one, five and ten years, and of the number whose physical condition in ordinary surroundings is unimpaired at these epochs. A similar return, limited to Stage II. infections, should also be kept. There is at present sufficient data to enable us to recognize the fact that cure in a number of cases can be effected, although we are unaware of any acceptable statistics disclosing the percentage frequency of cure.

This subject is of vital importance at the present juncture to Australia. In the second quarter of this year nearly 1,000 cases of pulmonary tuberculosis were notified in the six States. The number is incomplete, since, for reasons difficult to follow, the disease is notifiable in only parts of New South Wales. There are approximately 3,000,000 inhabitants in the other five States, and the figures for the quarter would indicate that, at the present rate, one fresh consumptive is discovered each year in every group of 1,000 persons. Another significant fact is brought out in the quarterly returns of infective diseases which we published in our issue of last week. It is that the number of deaths from pulmonary tuberculosis exceeds 77% of the number of fresh infections detected and notified. In the third place, it will be noted that the toll of deaths from this disease is much greater than that claimed by any one other notifiable disease, and is indeed greater than the aggregate of deaths from the diseases notifiable in the States. In addition to the knowledge of the great frequency and appalling mortality of pulmonary tuberculosis in the Commonwealth, we have the prospect of a large increment of infections among our soldiers now serving at the front. It is therefore necessary to review the means at our disposal for dealing with this disease and to utilize those means, not merely with the view to the alleviation and cure of disease, but also for the purpose of checking its spread. Every experienced physician has noted that it is useless to treat advanced cases in sanatoria. The prognosis is not improved by the application of any means known to us. It is true that, in infrequent instances, the body may effect an arrest of a chronic tubercular process, even in an advanced stage, but it is vain to apply costly treatment in the hope that the highly improbable may occur. The presence of persons who are very ill and the fact of a death have a very detrimental effect on the progress toward recovery of those whose disease is still amenable to treatment. The proper place for persons in the third stage of the disease is the home or hospital for incurables. Life may

be prolonged, suffering alleviated and comfort assured in these places without subjecting other persons to grave risks of infection or of deterioration. The sanatorium should be zealously guarded, and no one should be admitted unless the prospect of marked improvement or cure is present. This would mean that our sanatoria would be emptied to a great extent. Patients are not easily persuaded to enter an institution at an early stage of consumption, and we fear medical practitioners are often little disposed to insist on this form of treatment being carried out. In the *British Medical Journal* of July 20, 1918, Dr. Camac Wilkinson attempts to counteract a wise utterance of Sir Bertrand Dawson, that no one would attempt to treat pulmonary tuberculosis outside a special institution or colony. Quite apart from the question of the true specificity of tuberculin, it is evident that sanatorium treatment, with or without tuberculin, offers the best chances of cure to the patient. The public health authorities, the military authorities and the medical profession must recognize the real problem, and must use all reasonable means to induce the patient to enter the sanatorium before it is too late.

THE EXAMINATION OF A WATER SUPPLY.

The philosopher who considers the laws of evidence, as exemplified in legal practice and in the scientific methods used to investigate the problems of natural phenomena, recognizes that conclusions are based on the applications of those principles of logic which are employed, mostly in an unconscious fashion, by all persons who arrive at correct judgements about what happens around them. The laws of logic represent the systematic statement of the reasoning processes which constitute what is often called common sense. The scientific method, so often invoked, does not involve a more precise examination or better judgement than is required for the correct interpretation of the events occurring in the routine daily life of every individual. Scientific investigation owes its accuracy and its importance to its exact adaptation to the required purpose. It seeks to arrive at incontrovertible decisions by using means which are capable of supplying adequate information.

A scientific examination of any product such as the water supply of a city or of a district can only be made as a result of definite knowledge of the purposes served by the water distributed. The water that is carried into houses by the pipes from the principal mains, is drunk as a beverage, renders food free from impurities, provides the liquid in which many articles of the diet are cooked and eaten, washes and refreshes the human body, removes the accumulated excretions from the clothes, cleanses the dwelling-house and its furnishings from dust and dirt, and lays the dust of the streets and thoroughfares. Water is utilized freely for many industrial processes. Surplus water is used to remove waste and excreta by means of some sewerage system and to stimulate the growth of plants when the rainfall fails.

The scientific examination of the household water is directed towards ascertaining its suitability for each of these purposes. The examination will require to take as many different forms as there are purposes to which the water is put. Since water is taken to allay thirst in men and beasts, it will be necessary to ensure that its consumption will not interfere with the continued health of the community. A chemical examination will be needed to guarantee the absence of substances which may give rise to poisoning. Other modes of chemical analysis will be required to determine the degree to which the water is contaminated with putrifying material and with sewage. A bacteriological investigation will reveal the presence of organisms which induce disease or which may suggest contamination with unwholesome substances. A microscopical study may reveal minute forms of life, which may become parasitic in the human body or in animals, or it may show the presence of small vegetable organisms, which may impede the flow of the water and give rise to some decomposition, which may taint the supply.

As water is used for cleansing many things which are contained within the house by means of soap, it is necessary to examine the water in regard to the amount of precipitate that is formed when soap is dissolved in the water. The presence of gases in the water modifies its action as a detergent, and may be considered in connexion with the reaction of the water. The presence of minute traces of different metals may greatly effect the use of water for horti-

cultural and agricultural purposes, and may influence its use in relation to certain trades.

It thus becomes evident that the examination of the water supply of a city must take note of the methods which are utilized in the study of both chemical and biological sciences. The chemical analysis of drinking waters has been raised to considerable proficiency as a consequence of an experience lasting over half a century. The bacteriological and biological examinations are as yet carried out in no systematic manner. When we reflect on the influence which micro-organisms exercise, not only on the health of man, but on the numerous fermentations and putrefactions occurring in his surroundings, we cannot but recognize that a more complete study of the forms of life contained in the water distributed to each house is eminently desirable. Such an examination should be directed, not only towards germs pathogenic to man and the domestic animals, but also towards those bacteria, moulds, yeasts and fungi which evoke so many changes in the organic substances around us.

WAR BREAD.

The necessity of the war has caused many alterations in the appearance and taste of the bread which has been used in Great Britain during the last three years. The war bread made at the present time is manufactured from wheaten flour, which is milled in such a way that 90% of the grain is yielded as flour. To obtain so heavy a yield of flour some of the branny material of the outer part of the grain of wheat is ground up finely and added to the flour along with the germ of the grain. Until the hard necessity of warfare enforced a change in practice, this branny portion of the milled wheat was entirely separated for use as food for animals. With this wheaten flour is mixed a variable proportion, usually less than one-fifth, of flour prepared from some other cereal, chiefly barley, rice and maize. While many persons find that this war bread causes no inconvenience, others complain that they suffer from indigestion as a consequence of using it. Others again affirm that war bread is unsuitable for sick folk, whatever may be nutritive value to the healthy.

The report of the Food Committee of the Royal Society of London on the "Digestibility of Bread" gives the conclusions reached after a well-conceived and wide research on the digestibility of breads made with flour containing 90% of the wheat grain, as compared with that made with flour containing 80% of the grain. The experiments have been performed upon four persons in London, four in Cambridge and four in Glasgow. The observations in these centres were controlled by Mr. J. A. Gardner, Professor F. Gowland Hopkins and Professor Noel Paton respectively. Many skilled workers assisted in the numerous analyses required during the experiments. The figures that were obtained showed that "90% bread" is well digested and that 94.5% of the nutritive matter of the diet is made use of in the human body. With "80% bread" it is found that 96.1% of the food consumed is absorbed. While these figures represent the average results obtained after many experiments, it may be noted that there was a close agreement in the figures derived from eleven of the subjects. One subject suffered from diarrhœa when fed upon "90% bread," and the experiment was discontinued. This person stated that he had not been able to eat brown bread previously without intestinal disturbance.

The dilution of wheaten flour with flour from other cereals can hardly be harmful, since the cereals which have been used have been the principal article in the dietary of various nations. The Committee of the Royal Society have tested the digestibility of bread made with four parts of wheaten flour and one part of maize flour. This bread was partaken by 17 persons, on whom observations were made. In one centre the bread gave rise to fullness of the stomach and some flatulence, though the analytical data demonstrated that the constituents of the bread were readily absorbed. Another experiment on a larger scale in a munition factory showed that 47 workers could thrive well on bread made with four parts of "90% flour" and one part of a mixed flour made from equal portions of barley, maize and rice. Each week the workers were weighed. There was a steady increase in weight. There were no complaints of flatulence or of diarrhœa.

The symptoms which have been mainly noted as following the consumption of war bread, are a feeling of fullness, flatulence and looseness of the bowels. These symptoms are not infrequently seen after any marked change in the diet. The experiments that have been completed, show that they do not arise from any lessened digestion of the bread. If they do arise from the bread they may be due to insufficient chewing of the bread.

The benefit derived from the addition of the extra part of the wheat grain to the flour has been asserted by the Committee, who allege that there is a gain of 9% in nourishment for the community, after making an allowance for the use of millers' "offal" to feed animals. As a recent writer has expressed it, this means that the community saves one pound in each eleven that are spent, one wheat-ship in each eleven sunk and one life in each eleven lost to give the people their daily bread.

EXPERIMENTAL MENINGOCOCCAL MENINGITIS.

The investigation of the infections of the central nervous system caused by the meningococcus has been retarded by the difficulty of infecting animals other than monkeys, which cannot be readily obtained except at high cost. The discovery of a simple method of inducing meningitis in rabbits by the introduction of meningococci will do much to accelerate research in regard to the spread and prevention of epidemic cerebro-spinal meningitis. C. R. Austrian has found[1]

[1] *Johns Hopkins Hospital Bulletin*, Vol. XXIX., p. 183, August, 1918.

that a needle can be easily passed into the spinal canal of a rabbit. Material can be injected through the needle into the lumbar region of the vertebral canal. This spinal puncture is carried out with the rabbit lightly narcotized with ether. When suspensions of serum-agar cultures of meningococci in normal salt solution are introduced into the lumbar region of the vertebral canal of rabbits, the greater number of the animals develope meningitis, fatal in 24 hours. Autopsy shows congestion of the spinal meninges and intense hyperæmia of *dura mater* and *pia mater* over the convexity of the brain. A turbid gelatinous exudate covers the dorsum of the medulla, pons and cerebellum. Smears made from this exudate reveal myriads of Gram-negative diplococci and numerous pus-cells. The meningococcus may be cultivated from the exudate. In some animals a fatal result is observed in twelve hours, but no gross lesions are noted at autopsy. In other rabbits recovery occurs after the presence of symptoms for a few hours.

As it was important to be certain that the organisms injected were meningococci, they were identified by morphological and staining characters, by cultural and fermentative tests and by agglutination with anti-meningococcal serum. Strains were obtained from the Rockefeller Institute, and others were isolated from patients suffering from epidemic cerebro-spinal meningitis.

Some attempts have been made by Austrian in regard to the modes of infecting rabbits. Cultures of meningococci have been injected into the mucous membranes of the nose or rubbed roughly in the nasal mucous membrane. The rabbits have not developed meningitis. Examination of the blood and of the spinal or cerebral meninges at various intervals of time has failed to reveal the organisms in the blood or in the membranes of the brain or cord. When a suspension of meningococci is injected into the blood stream through a vein of the ear, the diplococci disappear from the peripheral blood in 45 minutes. They cannot be detected in the meninges. The rabbits do not develope meningitis after these injections into the blood. When normal rabbit serum is introduced into the spinal canal of rabbits congestion of the membranes of the brain and cord follows. The rabbits show a few symptoms, such as muscular twitchings, but do not become ill. If meningococci are introduced into the blood stream within a few hours of an injection of normal serum into the spinal canal, fatal meningitis may be induced. In such animals the meningococcus can be found in the meninges, and may be recovered by culture.

This procedure of spinal puncture has certain disadvantages in rabbits. It is difficult to avoid injury of the spinal cord and some localized nervous injury. Further, it is not possible to withdraw any cerebro-spinal fluid through the needle. It is, therefore, not possible to use lumbar puncture for following the progress of an infection in rabbits *intra vitam*.

THE MEDICAL EXAMINATINON OF AVIATORS.

The medical profession had gradually recognized that it has a part—an important part—to play in the development of flying. Before the war but little thought was given to the psychical and physical qualities of a would-be aviator. It was held that, as aeroplanes were evolving, experience would have to be bought with the lives of pilots, and the only quality the pupils were expected to bring with them was keenness. The war has brought about a radical change. As aviation has changed from a sport to an earnest portion of warfare, the necessity has arisen for a careful selection of flying officers and a constant supervision and control by specially trained medical officers. Fleet-Surgeon J. St. John Murphy, R.N., finds that a typical aviator is usually a restless individual, old for his age by five or ten years, little disposed to read and very disposed to smoke countless cigarettes.[1] He holds that courage is not an essential for successful flying, and states that, while the aviator is "as brave as you like" in the air, he is usually very fearful of pain on *terra firma*. For war purposes, however, the aviator should be very brave, and he advocates a grading according to fitness, courage and ability to tolerate high altitudes. At the medical examination of candidates, in addition to the ordinary investigation of organs, etc., special attention should be paid to the presence or absence of a narrow-arched palate, a history of neurosis, a deflected septum or other nasal defect, dental defects, hearing or visual defects and impaired capability to hold the breath. In regard to the last point, he finds that a person who cannot hold his breath after a deep inspiration for at least 45 seconds is likely to suffer from air sickness. In all cases of doubt the medical officer should go up with the candidate on his trial flight and note how he behaves in the air. Great care is necessary for the selection of men as aerial gunlayers. Men frequently volunteer for gunlaying without realizing that this entails air-work. After the men have been passed for air-service, it is essential that they are properly handled. Leave should be granted for any disturbance of perfect health; pupils should never be allowed to see a crash; if they meet with an accident they should be carefully watched, to ascertain whether they are fit to resume flying, and it is wise to humour fancies, such as the dislike to certain types of planes. The medical officer has also the very difficult task of deciding whether an aviator who complains of air sickness is trying to get out of the service, or whether his complaints are well founded. A man who vomits on each occasion during a series of trial flights, is unlikely to prove himself suitable for flying.

The medical profession has suffered a great loss by the death of Sir William Henry Thompson, who lost his life by the torpedoing of the *Leinster*. Sir William Henry Thompson held the position of scientific adviser to the Ministry of Food. Several of his recent investigations have been discussed in this journal during the past few years. He was King's Professor of the Institutes of Medicine at Trinity College, Dublin, and was formerly Dunville Professor of Physiology at the Queen's College, Belfast. His distinguished career gained for him many important recognitions, both in Great Britain and in foreign countries. He was a life member of the British Medical Association.

In the absence of His Excellency, the Governor of Tasmania, Lady Newdegate performed the opening ceremony of the new No. 9 Australian General Hospital on October 11, 1918. The new hospital, which is situated in Davey Street, Hobart, has been planned more or less on the lines of the No. 11 Australian General Hospital at Caulfield. Sufficient accommodation has been provided to cover the probable requirements of the district.

[1] *Journal of the Royal Naval Medical Service*, July, 1918.

Abstracts from Current Medical Literature.

ORTHOPÆDIC SURGERY.

(127) The Pathology of the Peripheral Nerves in Gunshot Wounds.

Observations on about 200 cases of nerve injury were made by Sydney M. Cone (*Amer. Journ. Orthopedic Surgery*, August, 1918), who records the pathological findings on specimens which were obtained at the time of operation. In most cases the original wound had been healed for at least six months. In a few cases examination of material from the depths of the wound revealed the presence of staphylococci, in others the results were negative. Many of the nerve trunks had small round cells packed amongst the fibres. Blood pigment was commonly found in the sheath and endoneurium. The vascularity was invariably greatly increased throughout the specimens. The writer found the bulbous ends of divided nerves to consist to a large extent of nervous tissue. The fibrous scar between the nerve ends contained young nerves in the majority of the specimens. The scar tissue was usually cellular, vascular connective tissue; in only one instance was it sclerotic. In 82% of the material classified as adhesions, nerve fibres in bundles, fasciculi or young tendrils were found. Fat also carried nerve fibres, but muscle was not a conductor. Nerves capable of regeneration were found almost constantly in both the proximal and the distal ends of divided nerves, in the joining tissue and in adhesions. New nerve tissue was produced from the inoculation of this material into guinea-pigs. From his observations the author suggests that embryonic fibres formed in the distal segment of divided nerves may get a central connexion through skin and muscle nerves, injured at the same time as the main trunk, through an overlooked strand, through adhesions or through the intervening scar.

(128) The Problem of the Artificial Arm.

David Silver (*Journ. Amer. Med. Association*, July 20, 1918) says that the chief requirement in an artificial arm is movement, and the efficiency of the limb may be estimated in terms of hand function. The usefulness of the natural hand depends on rapidity and precision of movement, strength and touch. Strength is the only quality for which provision can be made adequately; touch is gone, and movements must be restricted to grasping of a simple character. The problem differs in the one-armed and in the armless. In the former the provision of an "auxiliary hand," with guiding, carrying and holding functions, gives satisfactory results. The types with hooked fingers and a movable thumb are most useful, particularly if the thumb is broadened and opposed by the first and second fingers. The shape of the fingers can be altered with advantage to make a better pincer. Movable fingers, though impressive to the purchaser, are not useful devices. Thumb-grasping power can be secured by a spring with a locking device, to give greater stability. As regards a working device, the most useful appears to be one resembling two fingers with a thumb working between them. This can be altered to suit various occupations. The one-handed should be placed in those occupations where maximum efficiency, as compared with the normal worker, can be secured. The problem in the case of the armless is more difficult. The two hands should not be the same, but there should be an endeavour to provide a dexterous and an auxiliary hand. Mental occupations are necessary to make the individual independent. Importance should be attached to the simplicity of the apparatus and the thorough training in its use.

(129) Arthrodesis of the Shoulder Joint.

C. Herman Bucholz (*Amer. Journ. Orthopedic Surgery*, June, 1918) discusses the various methods of dealing with paralysis of the shoulder, and concludes that arthrodesis is the procedure of choice, provided the pectoral, *serratus anterior* and *trapezius* muscles are intact. The indication for operation is the presence of instability of the joint, with relaxation of the capsule and the great advantage, in contrast to muscle transplantation, which may provide flexion and abduction, is the wide range of movement transmitted from the shoulder girdle to the humerus. The opinion of a number of writers is given regarding the most suitable age for operation, and this appears to be any time after the sixth year. The author's patients were young adults. From the unsatisfactory results obtained from his own technique the writer is inclined to follow Vulpius, who fixes the humerus to both the glenoid and the acromion processes with wire. An additional safeguard would be to use a bone peg, passed through the head of the humerus and penetrating the glenoid fossa. The position of the humerus in fixation is important. This should be abduction 90°, flexion 25°, and the forearm should be rotated through 40°. The operation should be followed by splinting until bony union is secured, and the restoration of the arm to the side of the body should be gradual. The author's results were not entirely satisfactory, owing to his failure to secure bony ankylosis.

(130) Flattening of the Upper Femoral Epiphysis.

The ætiology of the flattening of the upper end of the femur is discussed by Arthur T. Legg (*Amer. Journ. Orthopedic Surgery*, July, 1918) from a series of seventy-five cases. The condition has been previously ascribed to some alteration in the circulation of the epiphysis, to a congenital alteration of the epiphyseal cartilage and to a mild hæmatogenous infection of the epiphyseal line. In the author's series twenty-five patients gave a history of insidious onset; in twenty-six there was distinct trauma sustained, preceding the limp for which advice was sought. Twenty-four patients had had congenital dislocation of the hip. The theory advanced is that the flattening is due to weight bearing on an epiphysis which has been deprived of its blood supply. The blood supply in this region is sub-periosteal and slight trauma may lead to considerable injury.

(131) Tendon Transplantation to Stabilize the Hip Joint.

Robert M. Yergason (*Amer. Journ. Orthopedic Surg.*, May, 1918) describes an operation in which the tendon of the semimembranosus is used to prevent flexion of the hip joint in paralysis of the gluteal muscles. Before operation a plaster of Paris bandage is applied from the chest to the toes, to immobilize the hip in extension and lateral rotation. The cast is divided into an anterior and a posterior portion and removed for drying. At the operation the patient wears the anterior half of the cast and lies face downwards. Through a longitudinal incision the tendon of the semimembranosus is freed from the underlying muscle, drawn from beneath the biceps muscle and dissected up to the *tuber ischii*. Through a second incision it is fixed to the femur by being looped through the bone and by being sutured to itself. The wounds are closed and the posterior half of the cast is then applied. This is fixed to the anterior portion and the whole is worn for about one month. The operation gives greater stability to the hip joint, with the possibility of a certain amount of abduction and adduction. In this respect the operation is superior to arthrodesis, but has the same effect in preventing the flexion necessary for comfortable sitting.

(132) The Technique of Amputations.

Edred M. Corner (*Journ. R.A.M. Corps*, May, 1918) finds that a large number of stumps when certified as ready for the fitting of an artificial limb are unfit, principally because of tenderness, nerve bulbs and unhealed sinuses. He suggests that the technique of amputations has not reached finality. Skin and vessels are usually satisfactorily dealt with, but nerves, muscles and bones are often left exposed to sepsis. In the case of the nerves this may lead to adhesions or peri-neuritis, which may ascend to the spinal cord. All bulbous ends are not painful, but in tenderness of the stump the author found nerve tendrils extending into neighbouring tissues from imperfectly closed nerve ends. He suggests crushing the nerve ends and placing a fine, absorbable ligature round the trunk before allowing retraction. In larger nerves flaps are desirable to close the end of the trunks. In the case of bones necrosis is brought about by the heat of the saw cut, and the guillotine would be an improvement in this respect. The muscles should also be closed, to minimize septic mischief, such as myositis. This procedure would also lessen the amount of exudate.

MORPHOLOGY.

(133) The Form of the Urinary Bladder.

A. R. Thompson (*Journ. of Anatomy*, July, 1917) points out that he has had reason to alter his conception of the form of the urinary bladder. The text-books of anatomy describe this organ as if it were symmetrical. This description, judging from his observations, would appear to be quite inadequate and to call for revision. He has determined the form of the bladder by three methods: (*i.*) by observation in the living person by examination with the cystoscope, (*ii.*) by post-mortem injection with liquid plaster of Paris, in which the injections were carried out in no case longer than twenty-four hours after the death of the subject, and in some cases as early as two hours after death, and (*iii.*) by injections of solutions of collargol into the bladder and taking skiagraphs of the bladder containing varying quantities of the solution. A very satisfactory finding as a result of these methods was that the conception of the form of the bladder, as gleaned from the methods that could be used in the living subject, corresponded with the form actually disclosed when a plaster cast was obtained on the death of the individual. The chief observations made were: (*a*) The variability of the position of the plane of the trigone of the bladder; this explains why it is that the position in which the cystoscope has to be held to view the trigone varies with each individual case that has to be examined. No rule can be given. One finds out best by manipulation, and this is the experience of anyone working with the cystoscope. (*b*) The shape of the trigone region was found to be markedly at variance with the regular triangular shape depicted in the text-books. He shows a number of interesting diagrams of the size and shape of the trigone region and of the asymmetrical position taken by the ureteric orifice and ridge. (*c*) The shape of the bladder as a whole presented some very interesting differences of form; very often the bladder was more capacious on one or other side of the mid-line; in many cases the cavity of the bladder was found to project backwards by the side of the rectum; in some of these cases the ureteric orifice was directed laterally, and would present difficulties in attempts to catheterize the ureter. To these backward prolongations of the bladder cavity by the side of the rectum he has applied the term pararectal fossæ of the bladder. He found, further, that, in a given individual the bladder would have a different shape, as well as size, when it contained different quantities of fluid. This can be taken to mean that, when the bladder contracts on the contained fluid, it may do so irregularly.

(134) The Branchial Derivatives of the Pied-Billed Grebe.

C. E. Johnson (*Journ. Morphology*, June 20, 1918) gives the result of his investigations regarding the gill pouches and their derivatives, with special consideration of the post-branchial body. The question was dealt with specially in the pied-billed grebe, as this represents a low order of present-day birds, and one in which a few years ago the author studied the development of the thymus. The changes occurring in the third and fourth visceral pouches have been very fully worked out. As regards the thymus, it was found that the *Anlage* arises from each of the third and fourth pouches, from a proliferating area beginning in the anterior wall and continuing in the dorso-lateral wall to the posterior end of the pouch. The larger part is formed from the third pouch, and its caudal portion fuses very shortly with the much smaller derivative of the fourth pouch. A parathyroid body is formed from each of the third and fourth pouches. Their *Anlagen*, which appear soon after those of the thymus, arise as thickenings of the medial walls of the pouches, but eventually all of each pouch, excepting the thymus portion, becomes converted into the parathyroid body. Their separation from the thymus occurs early, and they take up a position on the dorso-lateral aspect of the thyroid, being enclosed in a common sheath of connective tissue. The larger parathyroid body is developed from the third pouch and lies medial, while the smaller one, arising from the fourth pouch, is lateral in position. Of the post-branchial bodies, the left alone persists as a large, irregular mass lying on the dorsal side of the thyroid, its posterior portion encircling the brachiocephalic trunk. The post-branchial body arises from the medial of two diverticulæ, into which the so-called fifth visceral pouch of birds becomes divided, and which has been interpreted as a sixth visceral pouch. The lateral of these two diverticula or fifth pouch becomes entirely incorporated in the fourth pouch, and does not participate in the formation of the post-branchial body.

(135) The Crystalline Style of Lamellibranchs.

Thurlow C. Nelson (*Journ. Morphology*, June 20, 1918) deals very fully with this subject, of which it may be said that few molluscous structures have excited more interest among scientists than this singular organ, yet very little more is known regarding its biological rôle than was the case two centuries ago. The style is found lying in the first portion of the intestine, with its anterior end projecting from the pylorus across the cavity of the stomach to the opposite wall. At the point of contact there is developed a plate-like structure of cartilaginous consistency, conforming to the outline of the stomach at that point. To this the name "gastric shield" is given. A brief résumé of the history of the crystalline style is given, extending from 1686, when Anton de Heide described it in his monograph on the common mussel, up to the present time. It is worthy of note that Huxley, in 1853, was the first to consider the style on epithelial secretion. As regard the immediate relations of the style with the gastro-intestinal tract it is stated that the first portion of the intestine, which lies between the stomach and the sharp bend beneath the heart, consists essentially of two regions. On the right side is the intestine proper and on the left the groove, which lodges the style, known as the style sac. Incompletely separating the intestine and style sac are a dorsal and a ventral ridge, forming two "typhlosoles," which extend throughout this portion of the intestine. The broad surfaces of these ridges are in apposition, leaving a narrow slit through which the style sac and intestine are in communication throughout their extent. The epithelium of the typhlosoles is composed of a single layer of long, ciliated cells, the cytoplasm being filled with many refractive granules. Between the ciliated cells are other secreting cells and mucous glands. The epithelium of the style sac is composed of shorter and thicker cells, with large nuclei, rich in chromatin, with great bristle-like cilia. The action of these cilia is such as to put the style in rotation in a clock-wise direction, and, at the same time, to push it anteriorly against the gastric shield. The style is formed from the secretion of the typhlosoles, by the action of the cilia, which beat the mucous globules and other secretions into a homogeneous mass. As this structure moves anteriorly, turning on its axis, successive layers of secretion are added to it, until, as it nears the stomach, the fully-formed crystalline style passes out of the style sac through the pylorus into the stomach. It has been shown previously that the style contains an enzyme of strong amylolytic power. The determination of the function of the style was chiefly carried out at a floating laboratory, stationed over the natural beds of the oyster, so that it was possible to remove a bivalve and in two or three minutes have it opened and under observation. It was found that the style of an oyster may dissolve within an hour after they were exposed by the receding tide. A new style may be built up within fifteen minutes from the time when the animal begins active feeding when submerged again. Upon dissolution the style forms a brown, viscous fluid, which remains in the style sac until the mollusc begins feeding again, when it is carried forward into the stomach by the active beating of the cilia. It was possible by cutting through the stomach wall to expose the head of the style and actually observe its rotation, which was quite rapid, being eleven to thirteen revolutions per minute. The head of the style gradually dissolves as a result of the activity of the gastric juices, the wearing away against the gastric shield, and also because of its tendency to spontaneous dissolution within a certain time after formation. Ingested material in the stomach is thus churned up, mixed with gastric juices and the amylolytic enzyme of the style, and also it is sorted over and purified, as sand grains and other débris are directed towards the caecum, while the mass of pure food material remains in the stomach for its necessary digestion. The rotation of the style thus acts as a substitute for muscular peristalsis. The gastric shield acts as a protective mechanism for the gastric mucosa against the abrasive action of the head of the revolving style.

British Medical Association News.

SCIENTIFIC.

A clinical meeting of the New South Wales Branch of the British Medical Association was held at the B.M.A. Building, Elizabeth Street, Sydney, on September 13, 1918, Dr. A. A. Palmer, the President, being in the chair.

Dr. H. Ritchie showed an obese girl, aged three years, who weighed 27 kilo. (4st. 2¼lbs.). Her weight at birth was 2.72 kilo. (6 lbs.). With normal growth she should have weighed approximately one-half her present weight. The child exhibited a great development of adipose tissue in the subcutaneous areas of the limbs and trunk. The skin was dry, a condition suggesting an atrophic change. The speech was lalling in character. On the lumbar region of the back there was a patch of silky hairs resembling the pubic hairs. The hairs were about 4 cm. in length, and were arranged around a central area of skin free from hairs. The child had complained of pain upon walking when brought to hospital. She was moderately intelligent, and exhibited a slight degree of skeletal gigantism. The sexual development was normal for the age, except for some overgrowth of the breasts. A Bordet test yielded a negative result. A Röntgenogram of the skull revealed no change in the *sella turcica*. He thought that this condition of abnormal growth was due to some disturbance of the "internal secretions." He would like to know if anyone present had seen a similar case. Such a developmental condition was sometimes associated with syphilis or with the presence of suprarenal tumour. A somewhat similar state was produced by hypopituitarism, but this condition was not seen at such an early age. In some respects the child showed a resemblance to cases of *dystrophia adiposa genitalis*. From a consideration of the whole of the signs and symptoms he had formed the opinion that the condition was due to a disturbance connected with the pineal gland. Sir Edward Schafer had given an account of similar cases in his classical work on the "Endocrine Glands."

Dr. E. Jeffrey read a report on a case of gangrene of the leg, probably due to angiospasm. An account of this patient appears upon page 326.

Dr. O. Robertson exhibited a patient who had obtained complete relief of symptoms after lumbar puncture. He sought a diagnosis of the condition. The history of this patient appears upon page 328.

Dr. W. F. Litchfield said that these were three most interesting cases. In respect to the patient exhibited by Dr. Ritchie, he thought that the description showed that the malady resulted from a disturbance of the internal secretions. There was such a well-marked association of the symptoms. Personally, he thought it hard to determine whether the pineal gland, the pituitary body or the suprarenal capsules were at fault. He had seen several cases of somewhat similar conditions. He remembered a boy, aged six years, with sexual precocity, with well developed sexual glands and with axillary and pubic hairs. The mental condition was normal. On examination, the patient had a retained testicle. Another patient was a girl, aged 18 years, who was undersized. She had no pubic hair and no mammary development. She had never menstruated. She had been admitted to the Children's Hospital. During some weeks of observation no symptoms could be ascertained. The history showed that there had been chronic diarrhœa, which was attributed to a defect of the pancreas. He had also seen a patient with Dr. A. W. Campbell in which there was a cerebral tumour filling both lateral ventricles. The pituitary body and the pineal gland were not affected. The patient was a child, eight years of age, with sexual precocity and well-grown sexual organs. He reported these cases without comment.

In regard to the case about which Dr. Jeffrey had read his notes, he might say that the theory of spasm did not appeal to him. Perhaps a spasm might be secondary to a condition of low vitality. He recalled that Dr. T. Fiaschi had noted that the large blood vessels passing to a gangrenous limb were very small.

In regard to the case exhibited by Dr. Robertson, he could not recognize the pathological basis. The amount of cerebro-spinal fluid withdrawn by lumbar puncture was undoubtedly more than could be obtained from a healthy child. He did not think that the patient suffered from "X" disease. In that condition the onset was sudden. The condition was possibly due to the injury. The history of the cases at Wagga Wagga were most interesting. He trusted that full records of their symptoms and their progress would be published.

Dr. H. Ritchie said that injury was probably the exciting cause of the increased amount of cerebro-spinal fluid in the patient shown by Dr. Robertson. In cases of concussion the the headache was relieved by lumbar puncture. An increased quantity of spinal fluid was noted in these patients. Eight or nine years ago he had seen a boy who had been hit on the head. The patient suffered from headache, but was not unconscious. Much cerebro-spinal fluid was removed by lumbar puncture. The boy became quite well. He emphasized the value of lumbar puncture in relieving coma after severe epileptic fits. Also patients suffering from sunstoke, with bounding pulse, showed great improvement after lumbar puncture. This treatment should be employed in cerebral malaria.

In respect to the history given by Dr. Jeffrey, he remarked that Raynaud's disease occurred in families. It was associated with thyroid disturbance and with scleroderma. He was impressed at the rapidity with which such a condition might clear up. On account of the remarkably rapid recovery which was at times observed, he was opposed to any physical theory of the size of the blood vessel or of thrombosis as an explanation of the gangrene.

Dr. T. W. Lipscombe congratulated Drs. Jeffrey, Corlette and Davidson on the outcome of their case. He wondered that the wound had healed so well when the vitality of the tissues was so low. These curious conditions were often associated in the same family. He had observed three sisters, one suffering from Raynaud's disease, another from goitre and the third from exophthalmos. He asked whether a Bordet test had been performed on the patient. Dr. Lipscombe questioned the use of the term precocity for a physical development.

Dr. C. Corlette thought that it was difficult to classify a case such as that exhibited by Dr. Ritchie. They placed together those cases in which there was some resemblance in the symptoms, though they were not able to ascertain how these symptoms were brought about. Similarly, it was difficult to separate cases of idiopathic gangrene from those of Raynaud's disease. Again, it was hard to draw a line between Raynaud's disease and intermittent claudication. He had always observed the close associated of the attacks with cold. He wondered how the symptoms started. He supposed that spasm occurred, in addition to endarterial disease. Probably metabolic changes initiated the condition.

The Honourable Dr. J. B. Nash, M.L.C., read some notes on stereoscopic radiography. He illustrated his remarks with a series of instructive lantern slides. The pictures were interesting, because they helped in the study of anatomy and in arriving at a correct diagnosis. The study of anatomy was the basis around which their whole science and art radiated. The diagnosis was the result of the sum total of the medical man's capacity, and was of the utmost importance to the patient. Most of the slides which were exhibited carried copies of radiograms which were presented in 1905 at the Medical Congress held in Adelaide. They were prepared by Mr. A. E. Freyet, and were the property of Dr. F. Bird, of Melbourne. These radiograms were the leading feature of the Congress. The original intent in their preparation was the exhibition of some vascular irregularity. To him, their special value lay in the display of the blood vessels as far as the arterioles and the venules in various internal organs, hollow, pyramidal and island. They also exhibited the relationships of the organs to the bony skeleton. Slides of the radiograms of the heart, stomach, intestine, kidney, spleen and liver illustrated these remarks. Dr. Nash proceeded to point out the immensely greater number of venules over arterioles in the slides demonstrating the heart and the liver. The bile ducts could be noted as fewer in number and less in calibre than the vessels of the hepatic artery or portal vein.

The remaining slides showed bullets inside the skull and in relation to the chest. One small piece of sharp metal had caused pain when the arm was moved through a large circle. The stereoscopic picture showed the piece to be between the deep surface of the scapular and the fourth rib. Through an incision made vertically along the upper two

thirds of the posterior margin of the scapular with the upper arm against the chest, the metal was found embedded in the deep surface of the *subscapularis* muscle. Dr. Nash thought that a good stereoscopic picture left on the brain exact anatomical details and the relationship of a foreign body thereto. No mathematical formula or arithmetical calculation could produce such impressions.

Patrick Leo Alphonsus O'Halloran, M.B., 1918 (Univ. Sydney), of Newcastle Hospital, Newcastle, has been nominated for election as a member of the New South Wales Branch.

Naval and Military.

CASUALTIES.

The 433rd and the 434th lists of casualties, which were published on October 12 and 14, 1918, respectively, contain a very large number of names. The number of wounded is especially great in the second list. Among those wounded are Major William Campbell Sawers, Captain George Redfearn Hamilton and Captain Alexander Paterson Murphy.

APPOINTMENTS.

The following notices dealing with appointments, etc., have appeared in the *Commonwealth of Australia Gazette*, No. 160, of October 10, 1918:—

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Brigade.

Appointment—

William Henry Orchard, M.B., B.S., to be appointed Surgeon, and to be Assistant District Naval Medical Officer, Melbourne, to date from 16th August, 1918.

Termination of Appointment—

The appointment of Surgeon Herbert Grindell Hurrey, M.B., B.S., as District Naval Medical Officer, Brisbane, to be terminated as on 31st August, 1918, on return of Fleet-Surgeon Archibald Birt Brockway, R.A.N.B., to duty.

Permanent Naval Forces of the Commonwealth (Sea-Going).

Payment to an Officer Acting in a Higher Rank—

Surgeon William Edgar Roberts, M.R.C.S., L.R.C.P., to be paid rates of pay and allowances as for Staff-Surgeon (on promotion) whilst temporarily acting in that rank; to date 27th August, 1918.

Australian Imperial Force.

Army Medical Corps.

To be Captains—

Sydney Crawcour and Roy Buckingham Trindall. Dated 10th September, 1918.

David Hamilton. Dated 11th September, 1918.

Thomas Muir Hendry. Dated 17th September, 1918.

Henry McLorinan. Dated 18th September, 1918.

Honorary Captain J. W. S. McKee, Australian Army Medical Corps Reserve. Dated 16th July, 1918. (This amends the reference to this officer which appeared in Executive Minute No. 595/1918, promulgated on page 1767 of *Commonwealth of Australia Gazette*, No. 135, of 29th August, 1918.)

Cancellation—

The notices referring to Captains Hamilton Speirs Kirkland and Arthur Thomas Rowlandson Robinson, Army Medical Corps, which appeared in Executive Minute No. 238/1918, promulgated on page 652 of *Commonwealth of Australia Gazette*, No. 52, dated 11th April, are cancelled.

Major (temporary Lieutenant-Colonel) R. S. McGregor, D.S.O., to command 4th Field Ambulance, and to retain the temporary rank of Lieutenant-Colonel whilst so employed. Dated 12th June, 1918.

Major H. J. Williams, D.S.O., from 1st Australian General Hospital, to be Senior Medical Officer, Sutton Veny Area, and is granted the temporary rank of Lieutenant-Colonel whilst so employed. Dated 29th May, 1918.

Australian Military Forces.

First Military District.

Australian Army Medical Corps—

The provisional and temporary appointment of Captain J. I. Robertson is terminated. Dated 30th June, 1918.

Australian Army Medical Corps Reserve—

James Frederick Merrilles to be Honorary Captain. Dated 10th August, 1918.

Ernest Humphry to be Honorary Captain. Dated 1st September, 1918.

Captain (Honorary Major) C. Shellshear to be transferred from the Australian Army Medical Corps Reserve, Second Military District. Dated 1st September, 1918.

Award of the Colonial Auxiliary Forces Officers' Decoration.

Australian Army Medical Corps—

Lieutenant-Colonel (Honorary Colonel) A. Sutton, C.B., C.M.G.

Second Military District.

Australian Army Medical Corps—

Captain (temporary Lieutenant-Colonel) A. J. Mackenzie vacates the appointment of Officer Commanding No. 4 Australian General Hospital and relinquishes the temporary rank of Lieutenant-Colonel. Dated 4th June, 1918.

Captain (provisional and temporary) A. T. Chapple to be transferred to the Australian Army Medical Corps Reserve and to be Honorary Captain. Dated 1st September, 1918.

Australian Army Medical Corps Reserve—

Captain (Honorary Major) C. Shellshear to be transferred to the Australian Army Medical Corps Reserve, First Military District. Dated 1st September, 1918.

Third Military District.

Australian Army Medical Corps Reserve—

Honorary Captain R. R. Wettenhall to be a member of Permanent Medical Referee Board, with pay consolidated at the rate of £550 per annum, and to be granted the temporary rank of Major whilst so employed, dated 29th August, 1918, *vice* Major C. A. Courtney, who relinquishes the appointment, 28th August, 1918.

Honorary Captain M. L. Coutts to be transferred to the Australian Army Medical Corps Reserve, Fifth Military District. Dated 15th August, 1918.

Fourth Military District.

Australian Army Medical Corps—

Captain (Honorary Major) C. Bollen to be transferred to the Australian Army Medical Corps Reserve. Dated 14th September, 1918.

Australian Army Medical Corps Reserve—

Frank Wesley Noble to be Honorary Captain. Dated 12th September, 1918.

Honorary Captain A. K. Gault to be transferred to the Australian Army Medical Corps and to be Captain (provisionally). Dated 15th September, 1918.

Fifth Military District

Australian Army Medical Corps Reserve—

Honorary Captain M. L. Coutts to be transferred from the Australian Army Medical Corps Reserve, Third Military District. Dated 15th August, 1918.

Sixth Military District.

Australian Army Medical Corps—

Captain F. G. Heyer to be transferred to the Australian Army Medical Corps Reserve. Dated 1st September, 1918.

Promotions made for specially meritorious service dur-

ing the present war, dated 3rd June, 1918, except where otherwise stated:—

To be Brevet Majors—

Captain R. Fowler and J. R. M. Beith, Australian Army Medical Corps.

To be Honorary Major—

Honorary Captain M. W. Cave, Australian Army Medical Corps Reserve.

Australian Naval and Military Expeditionary Force.

Fourth Military District.

Termination of Appointment—

Major J. W. Flood. Dated 12th May, 1918.

Public Health.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending September 28, 1918:—

	Metropolitan Combined District. Cs.	Dths.	Hunter River Combined District. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Enteric Fever	6	1	1	0	5	1	12	2
Scarlatina	6	1	1	0	5	0	12	1
Diphtheria	35	1	4	0	40	1	79	2
*Pul. Tuberculosis	26	9	2	2	1	0	29	11
C'bro-Sp'l Menin.	2	1	0	0	3	2	5	3
Poliomyelitis	0	0	0	0	3	0	3	0

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending October 6, 1918:—

	Metropolitan. Cs.	Dths.	Rest of State. Cs.	Dths.	Total Cs.	Dths.
Enteric Fever	1	0	0	0	1	0
Scarlatina	26	0	25	2	51	2
Diphtheria	39	0	69	2	108	2
Pulmonary Tuberculosis	11	3	29	16	40	19
C'bro-Spinal Meningitis	2	—	0	—	2	—

QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending October 5, 1918:—

Diseases.	No. of Cases.
Scarlatina	2
Diphtheria	33
Pulmonary Tuberculosis	7
Puerperal Fever	1
Erysipelas	2
Cerebro-Spinal Meningitis	1

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, during the week ending September 21, 1918:—

	Adelaide. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Scarlatina	2	0	11	0	13	0
Diphtheria	1	0	39	1	40	1
Pulmonary Tuberculosis	0	3	9	8	9	11
C'bro-Spinal Meningitis	0	0	0	1	0	1
Erysipelas	1	0	1	0	2	0
Morbilli	0	0	3	0	3	0
Pertussis	0	0	34	0	34	0

WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending September 21, 1918:—

	Metropolitan. Cases.	Rest of State. Cases.	Totals. Cases.
Scarlatina	9	4	13
Diphtheria	10	7	17
Pulmonary Tuberculosis	1	2	3
Beri Beri	0	1	1

TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the week ending September 28, 1918:—

Diseases.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Enteric Fever	1	0	1	2
Diphtheria	4	1	6	11
Pulmonary Tuberculosis	1	0	0	1
Puerperal Fever	0	0	1	1

THE HOBART HOSPITAL.

It will be remembered that in April, 1917, the Government of Tasmania appointed five medical officers to the Hobart General Hospital, at salaries varying up to £750 a year, after the resignations of the members of the honorary staff had been received. This action was undertaken, notwithstanding the fact that the retiring members of the honorary staff had intimated that they were prepared to attend to the sick poor in the Hospital. The Government appointed one Victor Richard Rattan, who had been registered in the State on May 22, 1907, in virtue of the qualification M.D., Harvey College, Chicago, Illinois, U.S.A., 1907. On September 11 Mr. Whitsitt, M.L.A., moved the adjournment of the House, in order to call attention to the registration of Victor Richard Rattan. He pointed out that the Harvey College had been established in 1891, had lost its Charter in 1902, and had become extinct in 1905. The document submitted to the Board of Examiners for registration in 1907 purported to be a diploma of the Harvey College issued in the year 1907. A spirited debate took place, but no finality was arrived at. A considerable time before enquiries had been set on foot by the Medical Council and by the Tasmanian Branch of the British Medical Association for the purposes of ascertaining the status of the Harvey College, whether or no the Harvey College existed in 1907 and issued a diploma and whether there was any cause for the Medical Council to remove the name of Victor Richard Rattan from the Register. The Medical Council had called on Rattan to produce his diploma, but the diploma had not been produced. The Tasmanian Branch of the British Medical Association took steps to have the validity of the registration enquired into by the Medical Council, and a meeting of the Medical Council was summoned for October 5, 1918, to carry out this enquiry. On October 10 the Premier, the Honourable W. H. Lee, made a statement in the House of Assembly. He pointed out that a charge had been made that the Harvey College of Chicago was not one that was recognized by the medical faculty, and that any diploma issued by that College would not be registerable in Tasmania or any other part. As far as the Government was concerned, statements made concerning the particular College had not been given very weighty consideration, because the status of the College had become of secondary importance, since the diploma issued by that College or purporting to have been issued by that College had been accepted as a basis for the registration of Rattan in 1907. *The Medical Act, 1908*, validitated diplomas if there were any with flaws in their registration that appear in the *Gazette* of that year. Rattan had been in practice in the State for eleven years, and no attempt had been made to raise the question as to his status or ability or his right to practice until the time when he took the position of Surgeon-Superintendent of the Hobart General Hospital and the Hospital Bill was under consideration. Recently a new development had occurred. The actual validity of the diploma had been challenged. In view of the serious imputations contained in the correspondence which had passed between the Medical Council and

Rattan, the latter had requested him, the Premier, to institute an independent enquiry and to give him a full and ample opportunity to answer the charges. The Medical Council had been about to deal with the case. The Premier felt that, as the majority of the members of the Medical Council were members of the British Medical Association, "and some of the most militant members of that Association who have been in the position of accusers of Dr. Rattan, that it was more than one could humanly expect that, as members of the Medical Council, they would be perfectly impartial." He therefore requested the President and legal adviser of the Medical Council to meet him, and, as a result of that conference, they had agreed to the proposal that he would at once set up a Royal Commission, consisting of a member of the Supreme Court Bench, to enquire into the allegation made by the Tasmanian Branch of the British Medical Association and the Medical Council. The scope of this enquiry would be to ascertain the truth or otherwise of the charge made by the British Medical Association and the Medical Council that Rattan, when applying for registration in Tasmania, produced a diploma purporting to have been issued by the Harvey Medical College in 1907, which College, it was alleged, was not an existing institution, or, in other words, the enquiry would not be as to the status of that College or as to the length of time that Rattan passed as a student of the College, but into the more serious question as to whether he was registered on a diploma from a college not in existence. The Premier concluded by saying that, as far as he and his Government were concerned, they would be no party to anything that was wrong or fraudulent. There must be an independent enquiry, and Rattan must stand or fall by its findings.

The Medical Council, we are informed, desired that the scope of the enquiry should cover the length of the course of instruction through which Rattan passed at the Harvey College. The President and the legal adviser of the Medical Council maintained that the Premier agreed to this after it had been pointed out that, if it could be shown that Rattan had spent not more than three months as a student of the College, while the prescribed course of instruction was three, four or five years, this evidence would be material in enabling the Commissioner to arrive at a conclusion concerning the validity of the document. At a meeting of the Medical Council, held on October 11, 1918, it was determined that if the Premier persisted in narrowing the scope of the enquiry to a smaller compass than that which would have governed the enquiry by the Medical Council, the Council would withdraw its approval of a Royal Commission and proceed to deal with the charges in the usual way.

THE INSANE AND MENTALLY DEFECTIVE IN SOUTH AUSTRALIA

The annual report of the Inspector-General of Hospitals for South Australia (Dr. Bedlington H. Morris) on the Mental Hospital, Parkside, Adelaide, and on the certified mental defectives of South Australia for the year ended December 31, 1917, has been submitted to the Honourable the Chief Secretary of the State of South Australia. This report is made in accordance with Section 21 of the *Mental Defectives Act, 1913*.

The report shows that the inmates in the Mental Hospital on December 31, 1917, numbered 1,176, consisting of 647 male patients and 529 female patients. The total number of persons admitted to the Mental Hospital during the year was 283, of whom 169 men and 103 women were received for the first time. Seven men and four women were returned to institutional life after leave on trial. These figures show that there were nineteen fewer persons admitted to the Mental Hospital than in the previous year. On further analysis it would appear that nine more men and twenty less women than in 1916 were admitted for the first time to the Hospital at Parkside, and that the number of persons returned to life in the institution was eight less than in 1916. The proportion of persons admitted to the population of the State was 6.24 per 10,000, or 1 to 1,604 persons. The males admitted were 8.39 per 10,000 persons in the State, or 1 to 1,192, and the females 4.39 per 10,000, or 1 to 2,279 persons. Upon admission the bodily condition of 75 patients was recorded as good, that of 97 patients as "fair" and that of 111 patients as bad. No person under fifteen years of age was admitted during the year. Six persons between 15 and 20 years old were received for treatment, 51 over 20 years old and under 30 years of age, 73 over 30 years and under 40 years, 48 over 40 years and under 50 years, 51 over 50 years and under 60 years, 26 over 60 years and under 70 years, and 27 over 70 years of age. Of the 283 patients admitted, 111 were stated to be married, 29 to be widowed and 142 to be single. In one case no information as to age, etc., could be elicited. The country of origin of the patient admitted to the Mental Hospital was alleged to be Australia in 185 instances, England in 42 cases, Ireland in 12 persons, Scotland in 10 instances, Germany four cases, Finland, Italy and Sweden in the cases of two persons for each country, and Africa, America, Denmark, Norway, Siam and Syria in the case of a single person for each country. A table giving the occupations of those admitted to Hospital during the year shows that 71 persons were engaged in domestic duties, 31 had no occupation, 54 were labourers, 14 were soldiers, eight were farmers, five were clerks, five were farm-labourers, four were miners, four were seamen and four were gardeners. Blacksmiths, butchers, fitters, firemen, hawkers, masons, milliners and shop assistants each contributed two patients. One civil servant, one solicitor, one clergyman, and one schoolmaster were admitted. No medical practitioners, but one nurse and one midwife were received into hospital.

A table stating the ætiological factors and associated conditions in the persons received for treatment during 1917 shows that 82 persons (52 men and 30 women) had suffered from a previous attack of mental disease. Inheritance was considered a causative factor in 25 persons (12 male and 13 female). In 10 of these patients there had been no previous attack of mental illness. Congenital deficiency was noticed in 19 persons (13 men and 6 women), of whom five suffered from epilepsy. Thirty-four persons (17 of each sex) developed their mental illness in relation to puberty, the climateric or senescence. Thirty of these patients were senile. Child-birth was considered only as a contributing factor in seven patients who became mentally affected from some other cause. Epilepsy was observed as the chief agent in causing insanity in twelve men. A cerebral tumour induced insanity in one woman. Three women became mentally defective from bodily diseases. Alcohol was believed to be the principal cause of mental disease in one man, and to have contributed to insanity in 31 men and 6 women. Venereal diseases are stated to have produced mental disease in one man and to have contributed to the causation of the disease in three men. In the case of 93 persons (60 men and 33 women) no reason could be assigned for the onset of mental disease. Attention may be drawn to the small share ascribed to syphilis in the causation of insanity in South Australia. In some other States of the Commonwealth and in certain other parts of the world, those placed in charge of the mentally defective regard syphilis as one of the chief agents inducing insanity. It would be of interest to ascertain how many of the patients in South Australia show evidence of the presence of syphilis.

A summary is given to show the form of mental disorder on admission of the various patients received during 1917. The patients are classified in three groups; those who suffered from the first attack of mental disease; those who had been previously insane; and those concerning whom no previous history of their mental state was available. The patients who were admitted in their first attack of mental disorder numbered 125 (75 male and 50 female). Thirty-six patients were received suffering from dementia which was organic in ten, secondary in seven and senile in nineteen. Mania claimed 29 victims, in 17 the disease being recent, in one recurrent, in one chronic and in ten *a potu*. Melancholia accounted for eight patients; in seventeen the disease is recorded as recent, in one as chronic. Two patients were received for stupor. Sixteen patients suffered from *dementia præcox*, the form being hebephrenic in eight, katatonic in four and paranoiac in four. There were eighteen cases of delusional insanity and ten of confusional insanity. Six persons were admitted with general paralysis of the insane. The patients received for treatment who had suffered from a previous attack of mental disorder numbered 108 (68 men and 40 women). Mania account for 41 patients, the disease being recurrent in 31 and *a potu* in five. Melancholia was recorded for 13 patients, the disease being recurrent in 11. Sixteen patients were classified as affected with dementia, in four organic, in four secondary and in eight senile. Thir-

teen patients exhibited *dementia præcox*, in four hebephrenic, in two katatonic and in seven paranoiac. There were twenty victims of delusional insanity and two of confusional insanity.

During the year 1917 79 men and 54 women were discharged as having recovered from their mental disease, and 15 men and 6 women were allowed to leave the mental hospital, though they had not recovered. Three patients made their escape, but were recaptured. None of these patients escaped whilst occupied in the grounds of the Parkside Mental Hospital. During the year 111 patients (73 male and 38 female) died. The total number of patients who were discharged or who died was 265. On December 31, 1917, there remained in the hospital 647 male and 529 female patients—a total of 1,176 persons. The average numbers of persons resident during the year was 1,160, and 1,441 patients came under care. The percentages of persons who recovered in 1917, on the number of patients admitted in 1917, are: for men, 45.1%; for women, 50.4%; and for all persons, 47.2%. Since January 1, 1846, 6,659 males and 4,704 persons have been admitted in South Australia for mental disease. In the same 72 years, 56.1% of the male patients and 57.67% of the female patients have been discharged from institutional treatment. Of the whole number of patients, 14.84% of the men and 17.45% women were re-admitted as relapsed patients. There died in the institution 34.24% of the male patients and 31.08% of the female patients.

Fourteen soldiers were admitted during 1917; nine of these had returned from active service. One was discharged as cured, and three were permitted leave, as they had improved. No deaths occurred among these fourteen patients. It was found that five out of the nine who went on active service had been insane prior to enlistment, whilst three out of the five received from camps were similarly affected. Two of the returned soldiers and the remaining two camp patients would have become insane in due course of time. The Acting-Superintendent of the Parkside Mental Hospital (Dr. J. C. R. Lind) concludes from these cases that the horrors of war do not produce insanity in normally balanced persons.

Of the 133 patients who recovered, 36 had been in residence under three months, 28 from three to six months, 18 from six to nine months, and 10 from nine to twelve months. Thus 70% of the patients who recovered their sanity had been less than twelve months in residence.

The table of the causes of death among those dying in 1917 gives a principal and a contributory cause for each decease. Dealing firstly with the principal causes of death, notice may be taken of 42 deaths due to senile decay. Thirteen deaths are ascribed to organic disease of the brain, eight deaths to general paralysis of the insane, six deaths to melancholic exhaustion and three to maniacal exhaustion. Three deaths are stated to be due to epilepsy, two to apoplexy and one to locomotor ataxy. Among thoracic ailments, eight deaths are ascribed to pulmonary tuberculosis, two to pneumonia, three to pleurisy, one to bronchitis and five to cardiac disease. Four deaths were due to dysentery, four to malignant tumours, one to thermic fever and one to asthenia. Two deaths were produced by renal disease and one by prostatic disease. The contributory causes of death were cardiac disease in fourteen persons, syncope in eleven persons, septicæmia in eleven persons, bronchitis in seven persons, dysentery in five persons, renal disease in five persons and cystitis in five persons. Asthenia contributed to the decease of twenty persons and apoplexy of twelve others. One patient had suffered from Raynaud's disease.

The Acting-Superintendent states in his report that the overcrowding of the Parkside Mental Hospital predisposes to the occurrence of infectious diseases. Among eleven patients suffering from pulmonary tuberculosis there were eight deaths. There were nine deaths from dysentery, but the number of patients affected with dysentery is not mentioned. There were two patients affected with enteric fever, both of whom recovered. The mortality among the patients was 96 per 1,000 resident.

The expenditure on the Mental Hospital during 1917 was £48,163, an increase of £4,041 on the expenditure for 1916. The increased expenditure was chiefly due to wages and allowances. Notwithstanding the greater expenditure, the daily average cost per patient was ½d. less than in 1916. The diminution was due to careful administration and to an increased revenue from fees from patients. The cost per day of a patient was 10s. 7¾d., after deducting the revenue received in 1917. The revenue amounted to £12,994, of which £12,259 was derived from maintenance fees. The sales of pigs yielded £367, of live stock £31, of fat £215 and of bones £37. The economy of the administration may be inferred from the fact that £1 15s. was received for old boot soles, £2 12s. for tea lead and £4 10s. for bottles. The expenses for maintenance, including provisions, bedding, clothing and medical comforts, were £25,009. Salaries and allowances absorbed £21,053. Fuel cost £1,118, medicines £462 and water £433. The daily average cost per patient was 2s. 3½d.

Dr. Morris regards the intention of the Government to erect a receiving house at Enfield as the first step in overcoming the difficulties due to the overcrowding of the hospital. Among the urgent improvements needed at Parkside are mentioned a modern laundry, kitchen, stores and a small pathological department, to provide better facilities for making autopsies.

Authority has been received by the Inspector-General for the transfer of children from Parkside to an institution more suited to their needs. A Montessori school is being initiated on a small scale. While great results are not expected from the material in the Mental Hospital, the school will arouse interest and will brighten the lives of some of the patients. A small room has been fitted as a library for the benefit of the patients. The nucleus of a library has been provided in part by the department and in part by donations of books, periodicals and papers. This innovation has been much appreciated by the patients, who have made free use of the library.

Special Correspondence.

(By Our Special Correspondent.)

LONDON LETTER.

The Report of the Liquor Traffic Control Board.

The fourth report of the Liquor Traffic Central Control Board was issued at the middle of May. The efficiency with which drunkenness has been diminished is generally recognized, and is fully corroborated by the records of the year with which this report deals.

In the year 1917-18 the amount of spirits available for consumption, and the authorized standard barrelage of beer, was 50% less than in 1916-17. Owing, however, to the progressive dilution of spirits and the decline in beer gravities, the bulk supply did not decrease proportionately, the reduction in the case of beer being under 30%.

The figures of convictions for drunkenness show (1) that, while public drunkenness had already, by the end of 1916, reached a low level, which would have been thought incredible two years previously, there has since been a further substantial decline; (2) that this further decline occurred mainly in the earlier months of 1917; and (3) that a further improvement, though very slow and slight, and not quite general, appears to be still in progress.

The report describes the progress made in those districts which are under the direct control of the Board. The publication of balance sheets and profit and loss accounts is delayed by unavoidable causes; and the conditions in these areas is exceptional. Subject, however, to the reserve which these considerations compel, it may be conservatively estimated that, after meeting all the usual trading charges—that is to say, after providing for rents, repairs, license duty, rates and taxes, managerial and architectural staff, and depreciation on plant, furnishings, and utensils—the annual return on the total capital commitments of the Board's direct control undertakings has been on the scale of about 15%. The primary object of the Board's direct control undertakings, however, is not pecuniary profit, but the proper control of the liquor traffic as an aid towards the successful prosecution of the war.

At the end of the three years' work of the Board steady and continuous progress is still being made, though necessarily at a slower rate than in early days. The ground gained, including a reduction on public drunkenness to approximately one-quarter of its previous amount, leaves a relatively small margin for further improvement, but there are no signs of re-action. Whether the improvement achieved will be permanent or temporary depends on unknown factors, principally on future legislation and administration, but their

experience suggests to the Board that there is no such inherent difficulty in the problem as to render impossible the permanent maintenance of the present level of sobriety.

In England and Wales the deaths due to, or connected with, alcoholism (excluding cirrhosis of the liver) fell from 1,112 (males) and 719 (females) in 1913 to 358 (males) and 222 (females) in 1917; deaths due to cirrhosis of the liver, from 2,215 (males) and 1,665 (females) to 1,475 (males) and 808 (females); cases of attempted suicide, from 1,458 (males) and 968 (females) to 483 (males) and 452 (females); deaths from suffocation of infants under one year declined from 1,226 to 704.

The University of Cambridge and the United States of America.

The local lectures summer meeting of the University of Cambridge will be resumed this year, and will last from the 1st to the 13th of August, inclusive. The main subject of study will be the United States of America. The University has decided to confer the honorary degree of LL.D. on President Wilson *in absentio*, and Dr. Page, the American Ambassador to England, will receive it on his behalf. The inaugural lecture of the session will be delivered by Dr. Page on August 1.

The lectures will deal with history, literature, art, science, and with economic and social conditions. Among the lecturers who have promised to take part, in addition to the Vice-Chancellor, Dr. A. E. Shipley, are the following: Dr. Bumstead, Professor at Yale University; Mr. Henry S. Candy, Professor at Yale University; Mr. J. W. Cunliffe, Professor at Columbia University; Mr. G. H. Nettleton, Professor at Yale University; Sir William Osler, Regius Professor of Medicine at Oxford and Honorary Professor of Medicine at Johns Hopkins University; Dr. Santayana, late Professor at Harvard University; Lord Charnwood, Archdeacon Cunningham, Rev. W. H. Draper, Dr. H. D. Hazeltine, Dr. Pearce Higgins, Mr. L. R. Holme, Rev. Dr. Lawrence, Mr. J. A. R. Marriott, M.P., Mr. J. Travis Mills, and Mr. H. Yule Oldham.

In the theological section a course of ten lectures will be given on the war and unity, including unity between Christian denominations, unity between classes, the unity of the Empire, and unity between races. Among the lecturers will be the Moderator of the Church of Scotland, Dr. James Cooper; the Rev. Canon Masterman; the Rev. Eric Milner-White, D.S.O.; and the Rev. Dr. Selbie.

The usual arrangements will be made for visiting the chief colleges. It is hoped to arrange one or two excursions within easy reach of Cambridge.

The Regeneration of England.

The Honourable F. M. B. Fisher, Minister of Trade for New Zealand, in an inspiring address given at a meeting of the National Party at 64 Victoria Street on May 31, said the doctrine most necessary to the salvation of our people was the regeneration of our own country. We must begin by clearing out the foreign element. At a recent meeting at the Royal Colonial Institute, the question of giving back the German colonies to Germany was discussed. Now, it was unfortunately too true that Germany's greatest colony was England itself. German interests had not only been powerful in the past, they were powerful in the present. There was no country in the world but England that would, during a great war, naturalize one of its enemies; no other country would turn an alien into an hereditary peer; no other country would employ foreigners in its Foreign Office or as its trade representatives abroad, or permit foreigners to pilot English ships. The fact was that the people of this country had become too internationalized. The standard of the courage and chivalry of the individual Briton was as high as ever, as was proved by the records of the battlefields of France and Flanders, but, taken as a whole and as a people, there seemed to be a diminution among them in the ancient pride of race. Otherwise, he could not understand why, when there was a good job going, it should go to a foreigner, or why we should send our finest men to the front while their jobs were taken on by foreigners, or why the national idea of a good dinner was imported food cooked by a foreign cook and served by a foreign waiter. The war should give us a new ideal. It should be England for the English, Britain for the British, and the Empire for us all.

Correspondence.

THE FEDERAL FUND.

Sir,—Two able articles, under the titles, "Looking into the Future"[1] and "Our Obligation to our Colleagues,"[2] have appeared in your columns, but, so far, neither has given rise to any comments for or against.

The object is such a good one that it cannot possibly be objected to. The methods to attain this object may be discussed with advantage. To begin with, it must be clearly borne in mind that the assistance given to those requiring temporary financial help must not in any way border on charity. For this purpose I take it that a fund is required of a dual character, most of which would be of a temporary character. This would materially assist at the same time the more permanent fund, which could well be merged with the benevolent funds at present existing and on which, it is possible, heavy demands may be made.

The earlier article speaks of £30,000 a year being raised for three years; the later suggests a lump sum of £100,000. Either way the amount looks large, and would require much trouble, time, organization and expense to ensure success.

As the greater part of the fund would be required for temporary purposes, I think the amount required could be more easily raised in another way, and one, too, which would not militate against war loans, but rather assist them.

I would suggest that, instead of only donations, a guarantee fund should be formed by members depositing with a trust committee in each State war loan bonds (or war certificates) for a period of, say, five years.

A member could spare from his securities war loan bonds to a much larger extent than he could cash. These bonds could be deposited with the banks interested as guarantee for any required loan by a returning colleague in the shape of a guaranteed overdraft. Thus a returning comrade could go to the committee of his State and say that he required temporary accommodation for £300. Instead of handing over the lump sum, with the entailed book-keeping and returning the loan in instalments or a lump sum, the committee would arrange for an overdraft to this amount by depositing the necessary bonds with the applicant's bank. The committee would be relieved of all book-keeping for interest, etc., as the bank would see to that, and the bank would advise from time to time as the amount of the overdraft required was lessened that so many bonds could be released. The returned comrade would only pay interest on the actual daily amount of his debit to the bank, and it would naturally be to his interest to wipe out the overdraft as soon as possible.

Those depositing bonds would, in many cases, be able to say: "Use the interest (whole or part, as may be) for strengthening the Benevolent Fund, for meeting the increased demands on that arising out of the war, for supplementing pensions, assisting in the education of children of disabled colleagues, etc."

As the demands for temporary assistance lessened, bonds could be returned by ballot, or specially in any urgent case. Doubtless some, whom fortune has specially favoured, would like to donate their bonds permanently to the Benevolent Fund of their State when the time for returning them comes round.

Yours, etc.,

LEONARD W. BICKLE,
Lieutenant-Colonel, Australian Army Medical Corps,
late Australian Imperial Forces.

Sydney, October 9, 1918.

GASTRIC PAIN.

Sir,—I read the discussion in your paper dealing with pain and the cause of pain from a gastric ulcer as a result of a paper read by Dr. Mills at the meeting of the local British Medical Association.

Now I would like to remark that all sorts of theories were advanced as to the cause of the pain, but the most obvious cause, and the cause which is advanced by two of my old teachers, Sir Arbuthnot Lane and Mr. Moynihan (now Sir Herbert Moynihan, of Leeds), and they are men of experi-

[1] *The Medical Journal of Australia*, p. 519, December 22, 1917.
[2] *The Medical Journal of Australia*, p. 225, September 14, 1918.

ence, was the movements of the stomach. In all cases of injury where pain is met with, rest is the essential feature for ease. We cannot control the stomach, so that rest at our own will is impossible, so that rest for the relief of pain is out of our control.

I acted as house surgeon for a man of great notoriety in the old country, a personal friend of Sir Arbuthnot Lane, and an apt student of that man's methods, and he harped incessantly on the cause of pain in gastric ulcer as being due to movements of the stomach. Personally I consider this is one of the most obvious causes of pain, and I would not go further than the addition of hyperacidity to intensify pain; but beyond that I do not wish to grope about, as you can advance theories, but you must substantiate them.

The discussion was very interesting to my mind, having worked as a student under these men, and having acted as house surgeon for a man who was wrapped up heart and soul in stomach surgery.

Yours, etc.,

"GASTRALGIA."

September 7, 1918.

Books Received.

COMMOTIONS ET ÉMOTIONS DE GUERRE, par André Léri, Préface du Professeur Pierre Marie (Collection Horizon: Précis de Médecine et de Chirurgie de Guerre); 1918. Paris: Masson et Cie; Demy 8vo., pp. 196. Price, 4 francs.

LA SUSPENSION DANS LE TRAITEMENT DES FRACTURES—Appareils Anglo-Américans—par P. Desfosses et Charles-Robert; Préface du M. Pierre Duval (Collection Horizon: Précis de Médecine et de Chirurgie de Guerre); 1918. Paris: Masson et Cie; Demy 8vo., pp. 172. Price, 4 francs.

THE TWIN IDEALS: AN EDUCATED COMMONWEALTH, in Two Volumes, by Sir James Barrett, C.M.G., M.D., F.R.C.S.; 1918. London: H. K. Lewis & Co., Ltd.; Demy 8vo.; Volume I., pp. 512, with maps and diagrams; Volume II., pp. 504, with maps and diagrams. Price, 25s. net.

Medical Appointments.

Dr. A. H. Kortum has been appointed Government Medical Officer at Cooktown and Visiting Surgeon to His Maesty's Police Gaol, Cooktown, Queensland, in place of the late Dr. A. H. F. B. Kortum.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other contract practice. Australian Prudential Association Proprietary, Limited. National Provident Association. Mutual National Provident Club.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Rockhampton Associated Friendly Societies. Cloncurry Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments in South Australia. Contract Practice, Appointments at Renmark.
WESTERN AUSTRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Parramatta, Auburn and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
TASMANIA. (Hon. Sec., Macquarie Street, Hobart.)	Medical Officers in all State-aided Hospitals in Tasmania.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, N.Z.

Diary for the Month.

Oct. 19.—Northern Suburbs Med. Assoc. (N.S.W.).
Oct. 22.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Oct. 25.—N.S.W. Branch, B.M.A.
Oct. 30.—Vic. Branch, B.M.A., Council.
Oct. 30.-Nov. 2.—Eye, Ear, Nose and Throat Congress, Melbourne.
Oct. 31.—S. Aust. Branch, B.M.A.
Nov. 1.—Q. Branch, B.M.A.
Nov. 4 to 13.—Vic. Branch, B.M.A., Nominations Received for Council.
Nov. 8.—S. Aust. Branch, B.M.A., Council.
Nov. 8.—N.S.W. Branch, B.M.A., Clinical.
Nov. 12.—Tas. Branch, B.M.A., Council and Branch.
Nov. 12.—N.S.W. Branch, Ethics Committee.
Nov. 13.—Vic. Branch, B.M.A.
Nov. 13.—North-Eastern Med. Assoc. (N.S.W.).
Nov. 14.—Vic. Branch, B.M.A., Council.
Nov. 19.—N.S.W. Branch, B.M.A., Executive and Finance Committee.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.